# LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued.

Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

### Aurora

An 18-page catalog issued by Aurora Metal Cabinet Works, Inc., Aurora, Ill., presents their line of ice cream cabinets, soda fountains, restaurant coolers, and luncheonettes for mechanical refrigeration. Four models of soda fountains are shown, ten models of ice cream cabinets with compartments for bottled goods and lunch service, four models of restaurant coolers, and a salad counter. Cork board insulation is used in all models.

### Cork Import

The first of a series of letters containing information about cork insulation and its uses has been received from the Cork Import Corp., 345-349 West 40th St., New York, N. Y. The process of making corkboard and covering from the time the bark is peeled from the cork oak tree until it is molded into its final form is described. Photographs illustrate various stages in the preparation of these products.

### Fretz

Fretz Brass & Copper Co., Inc., 523 Arch Street, Philadelphia, Pa., has issued a stock list of valves, tubing, and fittings for electric refrigerators. The list is in the form of a broadside with 21 illustrations of copper and brass fittings.

### Herrel

Refrigerators, display cases, storage counters and coolers for meat market, grocery and restaurant are included in a 16-page catalog issued by John Herrel & Sons, 244-248 Gear St., Columbus, Ohio. Photographs of actual installations are included in the catalog.

### Superfex

"Refrigeration from Oil Heat for Homes Anywhere," is the title of a booklet issued by the Perfection Stove Co., Cleveland, Ohio. It illustrates five models of oil burning refrigerators to be used where central station power is not available.

### Webb

A circular issued by Charles J. Webb Co., 116 Chestnut St., Philadelphia, Pa., manufacturers of the Webb slingabout, is specially prepared for Frigidaire Corporation. A numbered diagram sets forth the details of slingabout construction, such as the canvas cover, cotton padding, flannel lining with sole-leather reinforcement where buckle strain comes, sewed and riveted connections, and location of the hand holds. Two types are shown, with and without sling, and a table specifies the slingabout adapted to each of the Frigidaire models.

## Article Discusses Power Plant at Kelvinator Factory

In the June issue of *Factory and Industrial Management*, pages 1235-6, an article entitled, "How Kelvinator Handles Power," by F. N. Litten, describes the power plant at the Kelvinator factory in Detroit. Structure of the building, type of equipment used, provisions for future expansion, and efficiency of operation are discussed in a brief, non-technical style.

## New Store Will be Opened by Utility in Seattle

The Puget Sound Light & Power Co. of Seattle, Washington will open a store in the new building now nearing completion at 604 Second Ave. where electric refrigerators and other appliances will be sold.

# Norge Dealers From Three States Attend Sales Meeting of Ludwig Hommel & Co., Pittsburgh

**Over 150 Norge dealers attended a sales meeting and luncheon at the Fort Pitt Hotel in Pittsburgh, Pa., May 21, given by Ludwig Hommel & Co., Norge distributors in western Pennsylvania, eastern Ohio, northern West Virginia and Cleveland. Speakers at the meeting included K. M. Schaefer, general sales manager of Norge Corp., R. E. Densmore, of the Norge Corp., and H. L. Burk, of the Norge-Akron Sales Co., Akron, Ohio. J. N. Ewing, of Ludwig Hommel & Co. presided as toastmaster.**

# REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries or who can supply additional information are invited to address Electric Refrigeration News, referring to the query number.

### Pressure Reducing Valves

*Query No. 261*—A subscriber in Michigan asks, "Can you give us the name of any concern manufacturing pressure reducing valves for one-half inch suction line? We would also like to know where we can obtain a cabinet to set over a kitchen sink or on pantry shelving. The dimensions of this cabinet would approximate 3 to 4 ft. wide, 2 ft. high and 18 to 20 in. deep. Cooling coils would be installed in the center of this cabinet and the remote hook-up system would be used in this installation.

"Are there laws governing meat markets and butchers on meat trimmings and if there are where we can get a copy of the regulations?"

NOTE—The Ford Refrigerator Co., Inc., 219 Mary St., South Jacksonville, Fla., makes a specialty of building special refrigerators. You may obtain a copy of regulations governing meat markets and butchers on meat trimmings by writing to the U. S. Bureau of Animal Industries at Washington, D. C.—Editor.

### Who Makes the El Frezo Machine?

*Query No. 262*—A reader in New Jersey writes, "Can you tell us who manufactures the El Frezo compressor. We would also like to have the names of concerns making compressor units that can be purchased at a reasonable price."

NOTE—The following concerns manufacture condensing units: Kulair Corp., Kensington Ave. and M. St., Philadelphia, Pa., and Icelect Corp., Omaha, Nebr.—Editor.

### Small Unit Used For Cooling And Sterilizing Instruments In Hospitals

*Query No. 263*—A subscriber in Massachusetts writes, "We have a request from an industrial plant wanting to know if we can give them the name of the manufacturer who makes a small refrigerating plant or equipment, approximately a foot and a half square and about the same depth, that is used in hospitals and operating rooms for cooling and sterilizing instruments."

### Superior Iceless Refrigerator

*Query No. 264*—A reader in Oklahoma asks, "Can you give me the address of the Superior Electric Refrigeration Co. located some place in Ohio."

NOTE—The Superior Iceless Refrigerator, Inc., is located at Canton, Ohio.—Editor.

### Aluminum Ice Cube Trays

*Query No. 265*—A reader in Ohio states, "We would like to have the names of manufacturers who are making aluminum ice cube trays and dividers, also porcelain defrosting pans."

NOTE—The following concerns manufacture aluminum ice cube trays and grids: Harry Bros. Mfg. Co., 1502 E. Woodbridge St., Detroit, Mich., Hershey Corp., 8635 Conant St., Detroit, Mich., and Gueder, Paeschke and Frey Co., St. Paul Ave. and 15th St., Milwaukee, Wis. The Benjamin Electric Mfg. Co., Des Plaines, Ill., manufacturers porcelain defrosting pans.—Editor.

### Commercial Coils

*Query No. 266*—A reader in Wisconsin writes, "We would like to obtain the names of some of the independent manufacturers of direct expansion refrigeration coils for small condensing units. We handle the ———— line and would like to get in touch with some one manufacturing commercial fin coils."

NOTE—The McKean Co., Baum Blvd., Pittsburgh, Pa., and the Pierson-Larkin Refrigerating Corp., Atlanta, Ga., manufacture finned commercial coils.—Editor.

# FOREIGN SHIPMENTS OF ELECTRIC REFRIGERATORS

## May Exports Reported by Bureau of Foreign and Domestic Commerce

| Country of Destination | Units Up To ¼ Ton Capacity No. | Value | Units Over ¼ To 1 Ton Capacity No. | Value |
|---|---|---|---|---|
| Austria | 48 | 6,079 | — | — |
| Belgium | 177 | 25,244 | — | — |
| Czechoslovakia | 106 | 25,590 | — | — |
| Denmark | 55 | 8,885 | — | — |
| France | 229 | 28,532 | 12 | 2,790 |
| Germany | 270 | 63,351 | — | — |
| Gibraltar | 2 | 1,037 | — | — |
| Greece | 4 | 673 | — | — |
| Hungary | 16 | 2,320 | — | — |
| Italy | 140 | 29,380 | — | — |
| Netherlands | 88 | 15,763 | 1 | 204 |
| Norway | 2 | 185 | — | — |
| Poland and Danzig | 62 | 5,503 | 2 | 600 |
| Portugal | 12 | 2,675 | — | — |
| Rumania | 43 | 8,400 | — | — |
| Spain | 304 | 71,378 | 5 | 2,076 |
| Sweden | 23 | 4,435 | — | — |
| Switzerland | 84 | 13,709 | — | — |
| United Kingdom | 227 | 39,594 | — | — |
| Canada | 3,144 | 423,940 | 45 | 12,745 |
| Costa Rica | 3 | 520 | — | — |
| Honduras | 2 | 562 | — | — |
| Nicaragua | 2 | 420 | — | — |
| Panama | 12 | 4,165 | 1 | 612 |
| Salvador | 6 | 1,809 | — | — |
| Mexico | 173 | 41,133 | 2 | 622 |
| Bermudas | 32 | 6,531 | — | — |
| Barbados | 3 | 641 | — | — |
| Cuba | 97 | 15,529 | 8 | 3,017 |
| Dominican Republic | 17 | 4,664 | — | — |
| Netherland West Indies | 1 | 385 | — | — |
| Haiti, Republic of | 6 | 1,183 | — | — |
| Argentina | 49 | 10,893 | 42 | 24,760 |
| Brazil | 118 | 22,511 | — | — |
| Chile | 67 | 5,983 | — | — |
| Colombia | 24 | 3,947 | — | — |
| Venezuela | 4 | 768 | — | — |
| Aden | 1 | 102 | — | — |
| British India | 74 | 12,038 | 1 | 320 |
| British Malaya | 3 | 804 | — | — |
| Ceylon | 16 | 2,850 | — | — |
| China | 8 | 2,154 | — | — |
| Java and Madura | 5 | 1,951 | — | — |
| Other Netherland East Indies | 4 | 620 | — | — |
| Hong Kong | 41 | 6,252 | — | — |
| Japan | 15 | 2,214 | — | — |
| Palestine | 1 | 570 | — | — |
| Philippine Islands | 60 | 7,862 | — | — |
| Siam | 1 | 415 | — | — |
| Turkey | 2 | 464 | — | — |
| Australia | 281 | 45,587 | 2 | 491 |
| British Oceania | 19 | 1,279 | — | — |
| New Zealand | 22 | 3,578 | — | — |
| British East Africa | 23 | 5,584 | — | — |
| Union of South Africa | 62 | 14,088 | — | — |
| Egypt | 11 | 2,043 | — | — |
| Algeria and Tunisia | 35 | 6,202 | — | — |
| Morocco | 43 | 8,320 | — | — |
| Mozambique | 3 | 450 | — | — |
| Other Portuguese Africa | 10 | 3,461 | — | — |
| Canary Islands | 2 | 469 | — | — |
| Total | 6,394 | $1,017,674 | 121 | $48,237 |

# BOSTON SALESMAN SETS RECORD FOR KELVINATOR APARTMENT HOUSE JOBS

During the recent Vice President Burritt's Appreciation Contest staged by the Kelvinator Corp., Henry A. Dolan, a member of the sales staff of the Kelvinator Sales Corp. of Boston, Mass., in two weeks time closed orders for the installation of electric refrigeration in 1600 apartments.

He secured these orders by working from 14 to 16 hours a day. This record, Kelvinator officials believe, has seldom, if ever, been equaled during a similar period. In 1928, Mr. Dolan secured orders for 2800 apartment house installations during a two months effort.

# KULAIR HEADQUARTERS MOVED TO PHILADELPHIA

The Kulair Corp. which now has its headquarters in Philadelphia, Pa., was organized in 1926 and is not a new corporation as stated on page 1 of the June 10 issue of the NEWS. This company which recently transferred its activities from Norristown, controls the Franklin Air Compressor Corp., located at Norristown, Pa.

This separation of the air compressor and refrigeration business along with increased factory space has resulted in an increase of productive capacity. The office and factory of the Kulair Corp. are located at Kensington Ave. and M St. in Philadelphia.

# MASSACHUSETTS DISTRIBUTOR ANNOUNCES APPOINTMENT OF NEW HOLMES RETAIL DEALERS

J. G. Riga & Sons Co., distributors. Springfield, have appointed the following dealers of Holmes electric refrigerators in Massachusetts: R. J. Couture Co., 468 Main St., Springfield; Dwight Music Co., 362 Worthington St., Springfield; Maschin & Kratovil, 463 State St., Springfield; G. H. Messinger, 143 Dwight St., Springfield; Drago Bros., Turners Falls; George W. Griggs, 22 Amity St., Amherst; Jeffway Electric Shop, 91 Union St., Easthampton; Cook Electric Co., Inc., 25 Federal St., Greenfield; Hiersche Bros., Ludlow; Foster-Farrar Co., 162 Main St., Northampton; Glenn E. Grover, 8 Pearl St., Northampton; C. E. Parsons, South Deerfield and Depping & Moore, Westfield.

# COPELAND DOUBLES SALES IN NEW YORK CITY TERRITORY

Copeland sales in the New York city area in the first four months of 1929 were more than double those in the same period a year ago, according to "Chips", the house organ of Copeland Refrigeration Co. of New York. Included in the sales were an exceptional number of commercial installations in Paterson, N. J., and the sale of a special unit to Anthony J. Drexel Biddle, noted sportsman, for his tennis court building.

## Frigidaire Agency Opens at Dalton, Ga.

Under the management of W. H. Griffin, the Dalton Refrigeration company, handling the Frigidaire line, recently opened for business in Dalton, Ga.

# THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance—Positions Wanted—fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

### POSITIONS AVAILABLE

WANTED—Draftsmen also practical Engineers familiar with refrigeration machinery and plants. Apply by letter to Box 333, Salem, Ohio.

WANTED—Service Correspondent. To young man of initiative and real ability a splendid opportunity for future development is offered by Detroit manufacturer. Must have complete understanding of all phases of household, multiple and commercial installation and service problems with some understanding also of manufacturing processes. In reply give complete record of experience, past and present connections and references. State minimum salary desired. Immediate reply solicited. Box No. 177.

WANTED—Manufacturer now increasing field service organization is in need of two high-grade refrigeration service representatives. Applications will be considered only from men now successfully engaged or similarly engaged in the past. To qualify you must be thorough in detail and possess full knowledge of service and installation organization work and be qualified to conduct service instruction courses and develop the installation and service personnel of the dealers in the territory to which you will be assigned. Position immediately available. Box No. 178.

### POSITIONS WANTED

LATIN AMERICA—SALES AND SERVICE ENGINEER; competent organizer; with ten years' experience and residence in Latin America, thoroughly familiar with market, conditions and languages. Desires connection with strong firm as foreign representative. Excellent references. Box No. 173.

Thoroughly experienced factory representative of electric cabinets desires connection with cabinet manufacturer. Services available immediately. References and full particulars furnished. Address Box 176.

### MISCELLANEOUS

BUSINESS OPPORTUNITY—Will sell a substantial interest in a well known manufacturing plant now making four sizes of domestic and commercial refrigerating units. This is a wonderful opportunity for one who is capable of building a selling organization. Our product is right and moderately priced. Address Box No. 175.

**ELECTRICAL REFRIGERATION SUPPLIES CO., 51 BARCLAY ST., N. Y. CITY, are issuing a special price list semi-monthly. Dealers and service-men who are interested, may receive this list by sending name and address.**

**Refrigeration Service Co. Inc.**
SERVICE SPECIALISTS
Installations, Alterations, Repairs, Inspection, Reconditioning, Maintenance
New York City Tel.: Medallion 0028
Nights, Sundays or Holidays Susquehanna 4500
Office and Works 449 West 42nd St. Warehouse 281 11th Ave.

**COMMERCIAL SALES MANAGER WANTED**

**Electrical refrigeration manufacturer of nationally known product is seeking the services of one or more commercial salesmen to work out of its home office contacting with distributors and dealers. Applicant must have successful record of refrigeration sales experience, must be free to travel and must be thoroughly familiar with commercial refrigeration applications. In replying to this advertisement state previous experience as well as vital facts regarding age, remuneration desired, etc. Successful candidates may look forward to sales executive connection in commercial department. Box No. 179.**

**FOR SALE**

**New H-5 Servel**

**Refrigerators ..... $100.00 each**
**Water coolers ..... 80.00 each**
**Scene in Action sign at ..... $25.00**

**Empire Electric Machinery Company**
**Joplin, Missouri**

# Subscription Order

ELECTRIC REFRIGERATION NEWS,
550 MACCABEES BUILDING, DETROIT, MICH.

Please enter subscription to Electric Refrigeration News.

United States and Possessions:

☐ $2.00 per year. ☐ Three years for $5.00.

All other Countries:

☐ $2.25 per year. ☐ Two years for $4.00

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash

Name .....

Street Address .....

City and State .....

Remarks: .....

# ELECTRIC REFRIGERATION NEWS

**The business newspaper of the refrigeration industry**

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# FAIL TO AGREE ON LIMIT TO MULTIPLES

## LOCAL FOOD PRESERVATION COUNCILS GET INTO ACTION

### National Retail Association Members Enroll in Drive; Nation-Wide Advertising Program Ready

REGIONAL directors are reporting rapid strides in the work of organizing local councils, many of which have already drawn up their budgets and ordered promotion literature for distribution in their respective territories. Local participating companies in the drive have ordered more than 500,000 refrigerator thermometers which emphasize the 50 degree danger point in food preservation.

Members of the National Retail Association through the United States who are dealing in ice cabinets are now enrolled in the drive. At a meeting called July 11, at Chicago, by R. R. Rau, managing director of the association, the refrigerator committee started plans for the participation of the member stores in local drives. The Illinois Refrigerator Co., Morrison, Ill., has joined the contributors to the program and is actively in support of the movement.

National magazine advertising in the drive will get underway on August 10 in the Cosmopolitan magazine. In addition to the educational matter, the magazines will carry announcements of the $25,000 National Idea Contest, in which 835 prizes ranging from $10,000 down to $5.00 will be awarded. The general advertising plan includes the use of milk bottle jackets, cards for trucks and windows, thermometers, booklets, motion picture slides, food preservation talks, poster advertising and local broadcasting.

**Local Councils to Distribute Booklet**

To aid its work of education to the greatest possible extent, a book written by Mrs. Elizabeth Stone MacDonald, widely known authority on home economics, giving a detailed picture of the subject and explaining the contest, has been prepared. This booklet will be distributed by Local Councils, and local participating agencies, and readers of the national magazine advertisements will be referred to these local sources, and advised to secure a copy of this booklet through them.

The essays are to be headed, "Why 50 Degrees is the Danger Point," thus making each of those who sends in a reply a student of the requirements of proper food preservation.

Because this Program is receiving local publicity the results of this contest will be even more impressive. The influence of the contest in building public interest in refrigeration and food preservation, too, can be greatly enhanced by holding local contests, with local prizes, correlated with the National Idea Contest. Plans are being made by a number of Local Councils to hold such contests as part of their public activities in the September drive on public opinion.

The movement is one which should receive support, not merely because of its commercial possibilities, but because of its civic value. The problem of food spoilage, and disease and wastage brought about by careless methods of handling perishable food, is one of very serious proportions. Endorsements have been received from national associations which are interested in the problem of supplying the nation's foodstuffs—the latest of which is the United States Fisheries Association, Inc.

**Interesting Cooperation**

The initiation of active work in local organization and promotion of the Program has developed some very interesting instances of co-operative action on the part of the participating industrial and civic organizations. One, especially interesting, is contained in a letter from Jacob M. Irvine, secretary of the Dallas Ice Manufacturers Association. The letter, in commenting upon the active co-operation of the ice firms of Dallas in the Program, says.

"Our subscriptions are based on $1.00 per ton of daily ice manufacturing capacity. We ice men of Dallas feel that we have set an example for the ice men in other cities to follow. If you feel like crowing about our actions we have no objections whatever to the outside world knowing how we do things."

R. G. Kenyon, regional director No. 20, has been granted a ten-day leave of

(*Concluded on Page 2, Column 2*)

## HOWARD A. LEWIS IS ELECTED TREASURER OF KELVINATOR CORP.

At the meeting of the Board of Directors held July 30th, Howard A. Lewis was elected treasurer of Kelvinator Corp. He becomes vice president of the Kelvinator Sales Corp. and, in that capacity, continues as the director of the export business. He is vice president and managing director of the Canadian operation and a director of Kelvinator, Limited, London, England.

Mr. Lewis joined the Kelvinator organization January 1, 1926, as vice president and director of sales. One year later, when the Kelvinator, Leonard and Nizer companies were merged, he took over the British, Canadian and foreign operations.

Before joining Kelvinator Mr. Lewis was associated with the McGraw-Hill Publishing Co. for about eight years. He was with that company at the time it started the publication of *Electrical Merchandising*, and he helped to inaugurate what is now the McGraw-Hill marketing service for manufacturers.

Mr. Lewis' electrical experience dates back to the old Hotpoint days, having been associated with that company before it was taken over by General Electric.

## G. E. ARRANGING FOR BIG CONFERENCE AT ASSOCIATION ISLAND

Camp Refrigeration III, the annual conference of the General Electric refrigeration department, will be held this year August 28th to August 31st at Association Island, Henderson Harbor, N. Y.

Approximately 275 distributors, guests and members of the General Electric Co. will be in attendance. Business sessions will be held from 9:00 a. m. to 1:00 p. m., with P. B. Zimmerman, sales manager of the refrigeration department, acting as chairman.

A lively program of entertainment, including shows, trap shooting, golf, sailing and other athletic events, is being arranged. A humorous publication called the Caps-icer is being sent out at regular intervals to keep interest in the camp at a high pitch.

The theme of the camp is nautical. Each distributor's organization represents a dreadnaught, cruiser, destroyer or submarine, according to quotas, and at Association Island, guests and hosts like will be dressed in navy uniforms.

## DEMANDS SAFETY

**Health Commissioner Arnold H. Kegel has centered the interest of the industry in Chicago during the past month by his efforts to secure an ordinance which will make refrigeration absolutely safe in his city. With his department he has taken a stand against the multiple system, until it can be demonstrated to his satisfaction that central plants harbor no hazards. Dr. Kegel has been a highly successful surgeon in Chicago, and is nationally known for his discoveries in hospital sanitation.**

## FRIGIDAIRE OUTPUT SHOWS BIG INCREASE IN JAN.-JUNE PERIOD

Increases of Frigidaire shipments ranging from 64 to 112 per cent above those of the corresponding six months of 1928, are reported by the Frigidaire Corp., Dayton, Ohio. Shipments of household units during the first half of this year showed a gain of 112 per cent. Electric water cooler shipments ran 82 per cent ahead of those for the corresponding period of last year.

Export shipments of Frigidaire units show an increase of 43 per cent. The company reports that it has 13 travelling representatives overseas and is represented in 78 foreign countries. Over 100,000 Frigidaire units are reported to be in use abroad.

Frigidaire officials attribute these gains in shipments to the introduction of the cold control, room cooler and the new household model D-4.

## N.E.M.A. REFRIGERATION DIVISION WILL MEET IN CLEVELAND TOMORROW

The Refrigeration Division of the National Electrical Manufacturers' Association will meet in Cleveland, Ohio, Thursday, August 1, following the schedule of meetings agreed upon at Hot Springs, Va., in May. T. K. Quinn, manager Refrigeration Dept., General Electric Company is chairman of the group.

The National Electrical Manufacturers' Association will hold its annual convention at the Wardman Park hotel, Washington, D. C., during the week of October 7, officials of the Association have announced.

The fact that this convention is the only meeting attended by all the different product groups in the Association causes officials to predict a large attendance.

## COMMITTEE DEADLOCKS ON QUANTITY OF REFRIGERANT

### Arguments Over Central Plants Rock Hearings On New Refrigeration Ordinance at Chicago

DEADLOCKED over the question of the quantity of refrigerant to be allowed in any domestic system, the committee of engineers which has been representing the industry at recent code hearings in Chicago was forced to rest its case Friday, July 26, with a code which was complete on all points save that all-important feature.

Three weeks of effort on the part of the industry committee, the Chicago health department, and a subcommittee of the Chicago City Council to draft an ordinance regulating the installation of electric refrigeration in that city were brought to a dramatic climax in the Council chambers Friday afternoon, July 26, when opponents and proponents of the multiple system engaged in a heated word battle. At its conclusion the Aldermen announced that they would cease all public hearings on the subject, and would go into executive session until they could reach a decision.

The fight over multiples that occurred Friday was presaged by a similar combat Wednesday afternoon in Dr. Kegel's office, attended by the Council subcommittee, the industry committee, and the health department, in which the latter two groups were attempting to adjust the differences between the codes each had submitted.

During the morning and forepart of the afternoon of this session most of the minor details of the controversy had been cleared up, but when it came time to discuss the question of the quantity of refrigerant permissible, Senator Essington, attorney for the manufacturers, had to announce "an honest disagreement" between the members of his committee on this point.

**Factions In Spotlight**

The opposing factions in the committee, one insisting on a 20-pound limit, and the other holding out for an unlimited quantity of refrigerant, were brought into the public spotlight at this juncture when Health Commissioner Arnold H. Kegel announced the opposition of his department to large multiple systems in apartment houses.

Presenting a lengthy review of all the cases of alleged refrigerant poisoning which had come under his observation, the Commissioner pointed out that each case had occurred in a kitchenette apartment served by a multiple system. The Commissioner explained in detail how the accumulation of evidence had turned the finger of suspicion from electric refrigerators in general to methyl chloride inparticular, and finally to the multiple system.

Rallying to the defense, E. W. Smithson of the Frigidaire Corp., John Usher of the Mid City Heating Corp., Attorney T. F. Howe of General Motors, and Glen Muffly of Copeland Products, Inc., vigorously supported their position that multiple systems could be made safe.

Reinforcements for Dr. Kegel appeared in the persons of E. T. Williams of Servel, Inc., Harry B. Hayes of Absopure (who announced that his company was willing to cease installing multiple systems, although it would mean a loss of 75% of their business in Chicago), Attorney Sullivan of the Chicago School Board, and A. R. Stevenson of the General Electric Co., who arose to refute Smithson's statement—made in the heat of battle—that a 20-unit multiple system was no more dangerous than 20 individual units.

After several vain attempts to gain the floor, Senator Essington, attorney for the manufacturers, finally succeeded in securing an adjournment until Friday, and the uproar temporarily subsided.

**Elements of Battle**

The battle was renewed with increased fury in the Council chambers Friday afternoon. All the elements of battle which have helped make the Chicago situation so confusing to the outsider were present and accounting for themselves at this session. Proponents of sulphur dioxide and methyl chloride, of single units and multiple systems, manufacturers large and small, chemists with a doubtful panacea for refrigerant ills, and more chemists with plentiful buckets of cold water for such propositions—

(*Concluded on Page 3, Column 1*)

## COPELAND SHOWS NET PROFITS OF $266,942 FOR FIRST 6 MONTHS

Net profits of $266,942.48 for the first six months of 1929, after taxes, depreciation and the setting aside of liberal reserves, are reported by Copeland Products, Inc., Detroit. This is equivalent to $2.62 per share on 101,992 shares of the company's Class A stock, and compares with $2.23 per share for the corresponding period of 1928, an increase of 17%.

W. D. McElhinny, vice-president in charge of sales, states there is every indication that the second six-months business will approximate that of the first half. An aggressive sales and advertising campaign has been planned and the company's force of travelling representatives strengthened. "Over the past three years," says Mr. McElhinny, "Copeland business has shown a sure and steady growth due to a constant broadening of the line and a careful building up of the sales organization. The Copeland product is now sold in over 2000 cities and towns in the United States and in 25 foreign countries."

## KELVINATOR REPORTS PROFIT OF $1,301,657 DURING NINE MONTHS

For nine months of the fiscal year, Kelvinator Corp., Detroit, shows a net profit, after all charges, of $1,301,657, compared to a loss of $406,626 for the first nine months of 1928.

This statement indicates material improvement in the company's operations. The combination of increased sales and reduced cost of sales and of manufacturing, has brought the resulting increase in net profits.

On July 30th the company had no bank loans. The balance sheet of June 30, 1929, shows a net working capital of $6,492,213, an increase of $2,527,344 since September 30, 1928.

The report for the quarter ended June 30, 1929 is as follows:

| | 1928 | 1929 |
|---|---|---|
| Gross Profit | $2,185,566 | $2,823,644 |
| Total Operating Expense | 1,392,625 | 1,164,167 |
| Operating Profit | 792,941 | 1,659,477 |
| Other Deductions | 735,885 | 217,674 |
| | $57,056 | $1,441,803 |

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# FOOD PRESERVATION CAMPAIGN

## REGIONAL DIRECTORS REPORT PROGRESS IN ORGANIZATION WORK

### Over 250 Cities and Towns Ready For Food Preservation Drive

(*Concluded from Page 1, Column 1.*)

absence by the Southern California Edison Co. and has set up a budget of $50,000 for the city of Los Angeles. P. E. McChesney, regional director No. 13, reports that his territory in Texas and Louisiana is completely organized. Kansas City, Mo., is the first city in which the local council has completed arrangements for 24 sheet poster display.

A. C. McMicken, regional director No. 18, reports an active organization in Portland, Ore. Last year Portland held a food preservation month, when schools, city health and commercial organizations, which included utilities, ice companies, retailers of mechanical refrigerators and ice cabinets, worked together to put over the idea of food preservation in relation to domestic economy and health. The Pacific Coast Electrical Association is participating in the program and will endeavor to secure full cooperation from other allied industries.

C. A. Collier, in charge of district No. 10, states that he will have the budget for the state of North Carolina made up at one time and one requisition will assure sufficient tie-up material.

Three hundred cities and towns throughout Illinois will participate in the promotion of the National Food Preservation Program through the full support of the Central Illinois Public Service Co. for the movement, and E. L. Hinchcliff, regional director No. 9, is laying plans for participation of his home city, Chicago, in a way that will insure a full understanding of the 50 degree danger point for that city's three million. In the same district, organization work is being put under way in all the larger towns in Illinois and Wisconsin. The Electrical League is organizing the Milwaukee district, and the League at Rockford is sponsoring the activity in that city.

#### Number of Newspapers Are Planning Food Preservation Sections

The Wisconsin News, Milwaukee, has completed arrangements for a special section on Food Preservation Month the first week in September. The Brooklyn Standard-Union, Detroit Free Press, Chicago Tribune, the twenty-eight daily newspapers of the Scripps-Howard group, including the Pittsburgh Press, New York Telegram, and Cleveland Press, and the eighteen Hearst newspapers have already been at work on their sections for the past month.

Twenty pages in a Food Preservation section are planned by the Indianapolis Star. Among the 250 cities and towns in the United States which are completely organized, Indianapolis has one of the smoothest running organizations. Full participation is being planned and the Hoosier Capital is determined to be one of the nation's leaders in the movement.

Frank B. Pembleton has been touring New Jersey and Delaware to effect his organization through contact. A series of letters has been sent out and plans have been completed for intensive promotion on the Food Preservation Program. The local ice industry and numerous other groups interested in food preservation have been invited to participate.

#### C. L. Dunn Reports That Ohio Will Be In Active Column

C. L. Dunn, regional director No. 8, reports that all of Ohio will be in the active column by August 1, with every city organized. Orders for tie-ups are pouring in already, with plans for participation completed in many cities.

H. A. Brooks, regional director No. 7, has appointed a committee for Maryland and Virginia. Maryland's minute men are R. H. Tillman, and H. T. Connolly, Baltimore; O. G. Martino, Salisbury; R. Paul Smith, Hagerstown, and R. G. Anklam, Crisfield. Virginia will be directed by J. W. Hancock, Roanoke; M. J. O'Connell, Alexandria; R. J. Throckmorton, Richmond; Charles E. Ide, Bristol; and L. E. Long, Harrisonburg. C. M. Sharpe of the Potomac Electric Power Co., Washington, is directly in charge of activities in the District of Columbia.

Plymouth was chosen by W. G. Keay for the organization meeting of his district No. 2, Southern New England. The meeting was at the Mayflower Hotel, where a committee of twenty-five live commercial representatives of power companies and manufacturers went through organization preliminaries, and Julius Daniels, Percy J. Wilson and M. W. Walsh were named state chairmen for Massachusetts, Rhode Island and Connecticut, respectively.

## *THE EMBLEM OF FOOD SAFETY*

**The above symbol is a reminder of the need for proper refrigeration to keep perishable foods. Health protection and economic saving by the elimination of food spoilage are the central ideas of the national food preservation program, and the thermometer which registers a temperature of 50° Fahrenheit is emblematic of the safety point for foods.**

## OMAHA PLANNING FOR ACTIVE ORGANIZATION IN SEPTEMBER DRIVE

### Committee of Five Elected to Further Campaign Plans

A MEETING of twenty-five business men of Omaha was held at the Hotel Fontenelle, Thursday noon, July 18. J. E. Davidson, vice president of the National Food Preservation Council and president of the Nebraska Power Co., presided. He explained the object of the meeting to all present and following the luncheon the question was discussed from many angles with the result that a branch was organized in Omaha and committees to further the cause appointed.

Those invited to participate in this meeting were the representatives of five ice companies doing business in the city, nine from as many electric refrigeration companies, four refrigerator representatives from furniture stores selling either ice boxes or electric refrigeration and from the two large mail order houses in the city.

An executive committee of five was selected to carry on the work. That committee is: Arthur Storz, of the Storz Electric Refrigeration Co.; E. C. Forsberg, of the Peoples Ice and Cold Storage Co.; A. F. Eichenlaub, of Frigidaire sales force; J. J. Griffith, Omaha manager of Sears & Roebuck mail order house and S. L. Cooper, of the Orchard & Wilhelm Furniture Co. Mr. Storz has announced he will call a meeting of the executive committee within ten days to devise methods for the furtherance of the idea that "50 degrees refrigeration marks the danger point." All social and economic clubs as well as general associations of the women will be invited to take part in the meetings to be held by the executive committee.

The committee will also ask that representatives from all civic improvement and welfare clubs join in the campaign.

It was decided also to order a quantity of the literature, thermometers and other promotion articles suggested by the National Council. In addition to this the local council will offer cash prizes for the three best essays submitted in the national contest, by local talent. A special effort will be made to interest all restaurants, hotels and meat and grocery dealers.

The Women's division of the Nebraska Power Co. was the first to take action on the suggestion. Thursday afternoon the plan was endorsed by this club, after an explanation had been made by one of the executive committee.

## INDUSTRY CAN SAVE AMERICAN PUBLIC $700,000,000

THIS is the first opportunity, we understand, that the electrical industry has had to co-operate with the food industries. The average American family is spending $629.00 for foodstuffs. It has been estimated that some 10 per cent of this goes to waste, and that if there were a full realization of this 50 degree danger line, we might save in this country something like the sum of $700,000,000 that is wasted. Economically it would pay for this great service, and it would be a great benefit to the public and to this industry.

We therefore solicit the active cooperation of each member company when the regional director calls upon you for help and service.

—P. B. Zimmerman, secretary of National Food Preservation Council.

## Puffer-Hubbard Man Appointed To Minneapolis Food Preservation Committee

At the third meeting held for district No. 15 of the National Food Preservation Council July 9 at the offices of the Northern States Power Co., H. E. Young, regional director, appointed R. T. Phillips, of Puffer-Hubbard Co. chairman of the Minneapolis arrangements committee.

## G. E. Unit Keeps Food Fresh At Iowa Fox Farm

A silver fox is particular about the food he eats, even to the point where electric refrigeration has to be installed to assure him fresh and wholesome food, according to Floyd Nottger, owner of a silver fox farm in Waterloo, Ia., who equipped his farm with a large commercial model General Electric refrigerator. Meat for silver foxes has to be kept absolutely fresh and wholesome and it is most economically kept in this condition in an electric refrigerator.


When GENERAL ELECTRIC UNDERTOOK TO BUILD THEIR ALL-STEEL REFRIGERATOR—THEY SELECTED

INSULITE
*the Wood-Fiber Insulating Board*

OBVIOUSLY insulation is used in a refrigerator as a non-conductor of heat or cold.

The value of a refrigerator is primarily dependent upon its efficiency in this respect.

Therefore it is significant, when we say that the General Electric Company in undertaking to build a new improved all steel refrigerator, uses Insulite.

Our Engineering Department is at your disposal. Put your particular problems up to them without obligation. In the meantime, write for free samples of Insulite.

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MINNEAPOLIS—Builders Exchange Bldg., Dept. 11—MINNESOTA

ANACONDA
COPPER and COPPER ALLOYS
FOR
REFRIGERATOR PARTS

Anaconda Brass, Bronze and Everdur Die Pressed Parts for all purposes including Valves, Fittings, Hardware, etc.

Sheets and Rods for Hardware and Trimmings.

Sheets and Strip for Condensers.

Forgings and Die Pressed Parts for Valves and Fittings.

EVERDUR METAL Rods and Forgings for Valves and other parts which come in contact with acids or refrigerants.

EVERDUR for Screws and Bolts.

Screws made of this material can be forced into the hardest wood without twisting the shanks or slots, and because of their freedom from deterioration and rusting, will last indefinitely.

Illustrated Booklet E-2, describing Everdur Products, mailed upon request.

EVERDUR is a Copper-Silicon-Manganese Alloy containing no Zinc, which is as strong as steel, immune to rust and unusually resistant to corroding liquids, gases and vapors.

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# Chicago Health Commissioner Astounds Industry With Methyl Chloride Discoveries

Health Commissioner Arnold H. Kegel shows the effect of gas poisoning on the internal organs of guinea pigs at a conference of the Industry Committee, the City Council Sub-Committee, and the Health Department held in the Commissioner's office Thursday, July 18. Around the table from left to right are: Alderman Ross, Alderman Sloan, Alderman Eaton (chairman), Commissioner Kegel, the stenographer, E. T. Williams of Servel, Glen Muffly of Copeland, John Usher of Mid City Heating Co., and Leland P. Bannister of National Electrical Manufacturer's Association. Standing back of Chairman Eaton is former Illinois State Senator Thurlow G. Essington, counsel for the Industry Committee. Immediately back of Commissioner Kegel is Assistant Commissioner Koehler.

## INVESTIGATION IN CHICAGO TURNS TO MULTIPLE SYSTEMS

(Continued from Page 1, Column 5)

all were there and many were vociferous.

Officials of the steamfitters' union were present to "defend the livelihood of a large body of men." These were in turn attacked as "the fellows who put in the bum connections" by a big Irishman from the plumbers' union. Acting Corporation Counsel Breen was there, watching the progress of the proposed ordinance from the angle of the legal department.

Taking an active part in the proceedings was Gerald F. Gearon of the Boiler Inspection Department (Gearon later turned in a code of his own, covering industrial ice-making machines as well as multiple systems and single units, for consideration). Came also a Mrs. Holtz, chairman of the Public Health committee of the Chicago Women's Club, with an eloquent plea for safety and an abandonment of the multiple system.

Around the well known figure of Fremont Wilson, arch enemy of multiple systems, the battle raged most violently. The "representative of the people," invited to the meeting by Commissioner Kegel to explain the workings of the New York code (which prohibits multiple) stood up for more than an hour under a heavy bombardment from the Frigidaire squadron, cross fire from the Aldermen, and sniping from local men who claimed they "had something on" the unruffled Mr. Wilson.

**Bitter Words Exchanged**

Bitter words were exchanged, and the affair grew into a personal fight, before the plumbers and steamfitters interrupted it by taking a few more verbal swings at each other. At 5:30 o'clock the meeting adjourned with no conclusions reached, but with all sides claiming victories.

The subcommittee will now confer with members of the Health, Boiler Inspection, Law, and Electrical Departments in executive sessions until an ordinance is drafted. When this is completed, the subcommittee must report the proposed ordinance to the Health committee, and finally to the entire City Council for approval. Three months is a conservative estimate of the time all these operations will take, according to Senator Essington.

**Industry Committee**

Members of the industry committee, which was formed at the invitation of Dr. Kegel to assist in the drafting of a code (after several illnesses and one death, attributed to refrigerant gas leaks, caused the Commissioner to seek regulation of mechanical refrigeration) are:

R. Bourke Corcoran (chairman), Electric Association, Chicago.

Glen Muffly, Copeland Products, Inc., Detroit.

C. C. Spreen, Kelvinator Corp., Detroit.

E. T. Williams, Servel, Inc., New York City.

A. R. Stevenson, General Electric Co., Schenectady.

H. D. Edwards, Carbide and Carbon Co., Schenectady.

R. E. Smithson, Frigidaire Corp., Dayton.

R. W. Kritzer, Peerless Ice Machine Co., Chicago.

A. H. Goelz, Brunswick-Kroeschell Co., Chicago.

John Usher (ex-officio), Mid City Heating Co., Chicago.

Following the verdict of a Chicago coroner's jury (composed, with but one exception, of the same men who had declared Mrs. Viola Clark had died from methyl chloride poisoning a fortnight earlier) that an entire family—Joseph Painter, his wife and one-year old son—had been wiped out while sleeping July

(Continued on Page 4, Column 1)

## *Personalities in the Limelight at Chicago*

The battle of personalities is fully as intriguing as is the battle of groups. Among the most marked of these are:

Commissioner Kegel — strident, commanding, confident that he has all the facts in the case, marching to Armageddon for the health of Chicago.

Alderman Eaton—competent as a moderator, hunting for the facts, demanding that the manufacturers "show him" how multiples can be made safe, striving to preserve order in the turbulent sessions.

Senator Essington (counsel for the manufacturers)—smooth, suave, a keen psychologist and student of human nature, working diplomatically to concilate all the diverse interests and to bring about an early solution to the problem.

Leland P. Bannister (manager of the refrigeration division of the National Electrical Manufacturers' Association)—smiling, good-humored, moving constantly to co-ordinate the conflicting forces and preserve harmony among the members of his association, and recording in minute detail the various hearings and proceedings.

Alderman Taylor—a doctor, an avid and acrimonious cross-examiner, sarcastic, ever seeking for contradictions in the testimony.

Alderman Sloan—who had a wedding and a honeymoon all planned, and even had procured a license, when the refrigeration situation arose and required his regular attendance at committee hearings, thus postponing indefinitely his realization of connubial bliss.

Fremont Wilson — feared by many, cheered by others; an old hand at the game of baiting opponents and backing down opposition, "representing himself," and provoking storms of discussion and arguments.

Assistant Commissioner Koehler—kindly and accommodating, thoroughly acquainted with the technique of ordinance drafting (he has been doing it for 23 years in the Chicago Health Department), prosecuting the case against refrigerants with candor and persistency.

R. E. Smithson—fighting, full of explosive energy, ready with hair-trigger replies to all attacks on the multiple system.

E. T. Williams—calm, self-possessed, drawing from a fund of knowledge of refrigeration and industry happenings collected over a long period of time, adamant in his position that 20 pounds of refrigerant marks the limit of safety.

C. C. Spreen—the Sphinx's only rival, wearing a masterly poker face, sitting unobtrusively in obscure corners at public hearings, but sawing plenty of wood in private.

Glen Muffly—tolerant, good-humored, smoking innumerable tiny cigars of pencil-thickness, ever ready with exact engineering information to settle minor squabbles and most points, looked upon as the authority on details of construction.

A. R. Stevenson—quiet, unexcited, possessing the manner and appearance of an ambassador, sure of his facts, anxious to get back to his real job.


# Drastic Price Reductions

ON

**BOHN all-porcelain base cabinet models**

**WHITE PORCELAIN, OUTSIDE AND INSIDE**

**5, 6, 7, 9 and 12 Cubic Feet of Food Storage**

The handy base cabinet may either be used for refrigerating machinery or the storage of cooking utensils, canned goods, vegetables, etc.

These beautiful BOHN refrigerators, with their heavy insulation, sturdy general construction, and patented air-circulating principles, are an assurance that your units will render perfect refrigeration and do so economically.

Write for details of these remarkably low prices.

Many models for remote installation are also greatly reduced.

*Bohn is the World's Largest Builder of Quality Refrigerators*

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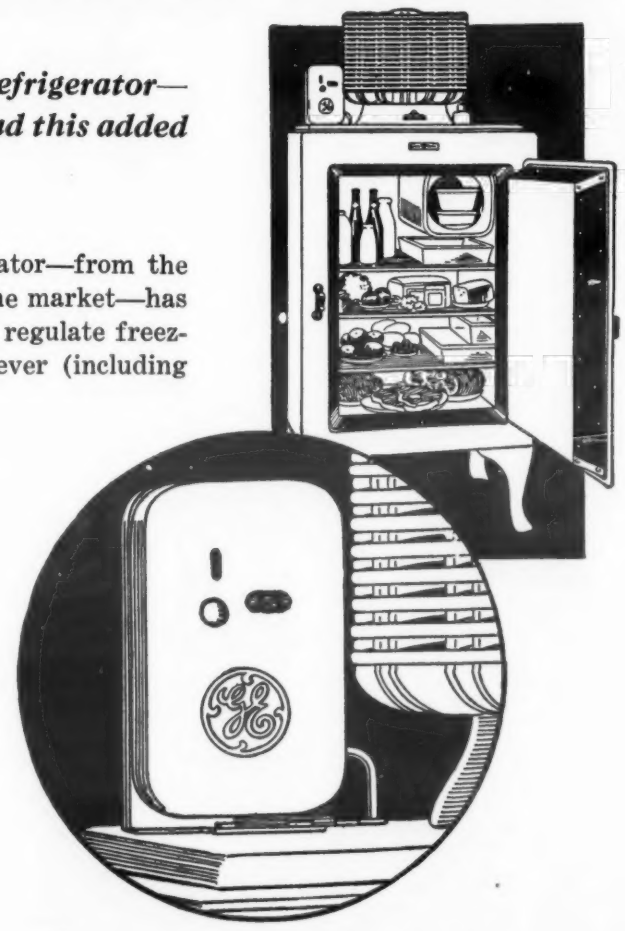
# The First Refrigerator to be equipped with an ACCESSIBLE FREEZING REGULATOR *was the General Electric*

*and every General Electric Refrigerator—from the first one sold—has had this added convenience*

EVERY General Electric Refrigerator—from the very first one that was put on the market—has had a simple and accessible device to regulate freezing speed. For all general uses, however (including the making of ice cubes and frozen desserts), the usual temperature in the General Electric Refrigerator is perfect. However, there may be times when you wish to hasten the process—and for those times you have this freezing regulator.

This refrigerator is also the first—and the only one—to have an all-steel cabinet, warp-proof, strong as a safe. All its mechanism is hermetically sealed in a steel casing and mounted on top to allow greatest shelf area for food storage. It operates quietly, causes no radio interference and never needs oiling. It is particularly sanitary and easy to keep clean.



**There are now more than 300,000 General Electric Refrigerators in use and not one owner has ever spent a dollar for repairs or service.**

**GENERAL ELECTRIC**
**ALL-STEEL REFRIGERATOR**

ELECTRIC REFRIGERATION DEPARTMENT, GENERAL ELECTRIC COMPANY, HANNA BUILDING, CLEVELAND, OHIO

# Chicago Officials Threaten Drastic Action Unless Multiple Systems Can Be Made Safe

**Seated around a table in Health Commissioner Arnold H. Kegel's office Wednesday, July 24, members of the Health Department and the Industry Committee tried to reach an agreement on a code regulating the installation of electric refrigerators, before a City Council subcommittee. Facing the camera (left to right) are: Alderman Sloan, O. A. Dwyer (standing) of The Chicago Tribune, Alderman Eaton, Commissioner Kegel, Assistant Commissioner Koehler, L. H. Thompson of U. S. Surgeon General Cumming's staff, Leland P. Bannister, manager of the Refrigeration Division of the National Electrical Manufacturers' Association, E. T. Mutchner of the Frigidaire Corp., F. M. Cockrell of Electric Refrigeration News, and E. T. Williams of Servel, Inc. Standing in the upper right corner are H. M. Williams of Frigidaire Corp. and Gerald F. Gearon of the Boiler Inspection Department. In the lower right corner, with profiles exposed, are A. R. Stevenson of General Electric Co., and A. H. Goelz of Brunswick Kroeschell Co. The picture does not show the large crowd which packed the room.**

# U. S. GOVERNMENT MAY BE DRAWN INTO CONTROVERSY

*(Continued from Page 3, Column 1.)*

16 by methyl chloride gas escaping into their apartment from a leak in a multiple refrigerating system, Commissioner Kegel persuaded the industry committee to insert a clause into the proposed code prohibiting toxic refrigerants which lacked a suitable odorant or detector.

**Methyl Chloride Men Wonder**

Although this occurrence seemed proof positive of the danger inherent in methyl chloride, and served to silence the protests of proponents of this refrigerant that it was so slightly toxic as to be entirely safe, several members of the latter group remained unconvinced that it was pure methyl chloride which had caused the deaths.

The presence of another gas in the supposed methyl chloride was suspected by some. Nevertheless C. W. Kritzer of the Peerless Ice Machine Co. ordered the removal of methyl chloride from 75,000 installations in Chicago.

Indications that the United States government will be drawn into the controversy came in the announcement of Secretary of War Good that experts of the Department of Chemical Warfare were at their service for any scientific experiments to help solve the problem, and in another from Surgeon General Cummings that representatives of the Public Health Service, Bureau of Mines, Chemical Warfare Service, and Bureau of Standards would co-operate in an investigation of refrigerant gases and their control. L. H. Thompson representing the Surgeon General, was present at both the Wednesday and Friday meetings.

**Aldermen to Make Decision**

In executive session the City Council subcommittee met Monday and thrashed out among themselves all the different arguments that had been presented to them during the turbulent series of hearings which they had been holding during the past few weeks.

Their deliberations were scheduled to be resumed today, with the hope that a decision might be reached before adjournment. Next week the entire subject will be reviewed before the Health Committee of the City Council, after which it will be taken to the Council itself for final consideration.

In the meantime the Health Department is at work on an ordinance which does not permit multiple systems, while Gerald F. Gearon of the Boiler Inspection Department is also submitting a new draft for an ordinance.

A thorough test of the properties and suitability of methyl chloride mixed with a new detector, one per cent acrolein, has been ordered by Commissioner Kegel. In addition to the Chicago Health Department, Maj. Gen. H. L. Gilchrist of the Chemical Warfare Service in Washington, and Prof. Julius Stieglitz, University of Chicago chemist, have been asked to experiment with the new gas.

This new solution is said to irritate the eyes, nose, and throat, cause a copious flow of tears, and gave a penetrating odor. It has been experimented with since July 10.

## *Committee Unity Shattered by Argument*

**Following is a report of the Wednesday session in Dr. Kegel's office, (see picture above.)**

Convening around a long table in Commissioner Kegel's office, members of the Health Department, the industry committee, and the City Council subcommittee met at 10 o'clock Wednesday morning to iron out all the differences between the code submitted by Dr. Kegel and the one prepared by the industry committee.

Save for a belligerant interruption at the first of the proceedings by Acting Corporation Counsel Breen, who demanded to know why he had not been asked to sit in on the meetings of the subcommittee, the morning session went very smoothly. Item by item, word by word, Senator Essington went over the manufacturers' code, and explained wherein and why it differed from that of the Health Department. The two groups were able to reconcile most of the minor differences, with the Health Department acquiescing on practically all of the changes made in their ordinance except those of fees, control of the sales of unlawful equipment, and the words used to describe the refrigerants.

After an adjournment of an hour and a half for lunch the session was reconvened. With most of the smaller difficulties disposed of, Chairman Eaton opened the discussion on multiple systems.

Commissioner Kegel announced the stand of his department against multiple systems, and presented a lengthy review of accidents and deaths in Chicago reputed to have been caused by escaping refrigerant gases, pointing out that each accident had occurred in a kitchenette apartment served by a multiple system.

Alderman Taylor cautioned the assemblage against too hasty action, and pointed out the great benefits bestowed upon mankind by mechanical refrigeration. He was followed by R. E. Smithson of Frigidaire, who opened his defense of multiple systems by saying:

**Smithson Speaks**

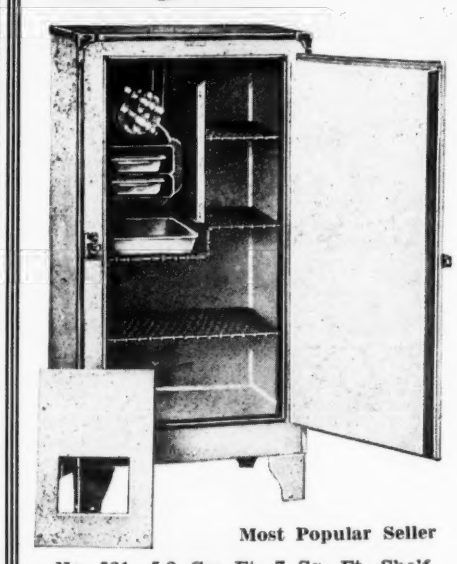
"There are at present possibly 35,000 or 40,000 systems using sulphur dioxide, serving possibly 800,000 apartments. To date, we have no record of one death having been caused by the use of these systems. We are willing to admit that there have been installations made that are possibly responsible for some accidents that might occur. Like all other things, we have not had regulations governing installations of those systems.

"We do not feel that multiple systems are any more hazardous than gases such as illuminating gas, naphtha, benzene or any others. It is purely a matter of regulation. In multiple systems using sulphur dioxide (I am speaking purely for the Frigidaire), we have seven to seven and one-half pounds in self-contained units. We have no more suction in the multiple systems than in self-con-

*(Continued on Page 5)*


Crystal TRADE MARK

**All-Steel Apartment House Cabinets**



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No. 521—5.2 Cu. Ft. 7 Sq. Ft. Shelf Space. Removable Front Baffle, Porcelain Drip Pan. 22½" wide, 45" high, 17½" deep.

Can also be furnished without legs. Special Sizes to meet any requirement.

Ask for Details.

**have made a remarkable record for service and satisfaction in thousands of old and new apartments the past three years. This is not surprising when it is considered that Crystal has been making steel refrigerators since 1910.**

**Pure Cork Board Insulation, sealed within air-tight steel walls is one of the many reasons for Crystal's remarkable record.**

**Crystal Cabinets will reduce the cost of the job because more than the usual number can be hooked up on one compressor.**

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*A Refrigeration Grade of* METHYL CHLORIDE

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IMPORTANT ADVANTAGES

USE ARTIC FOR

Household
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BECAUSE ARTIC IS

Non-corrosive
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is another R & H chemical specialty. That establishes its purity and dependability. Full information is contained in the above illustrated booklet. We shall be pleased to send a copy to possible users.

R & H also manufactures other Refrigerants

*The* ROESSLER & HASSLACHER CHEMICAL CO.

10 East 40th Street, New York City, N. Y.

# MULTIPLES ATTACKED AT CHICAGO SESSION

*(Continued from Page 4)*

tained systems, and for that reason we think we should be given consideration on multiple systems."

Following a short tilt on the part of the Aldermen, Mr. Smithson and E. T. Williams of Servel regarding tests and the code made by the Underwriters' Laboratories, Mr. Williams affirmed that his company did not recommend the multiple system, and that, in his opinion, 20 pounds of refrigerant should be the absolute limit. Mr. Smithson countered by asking:

"If we are dealing with hazards to health, is it fair to permit the installation of these machines with sealed units which have a gas burner that is operating continuously with an open flame?"

**Hayes Objects to Multiples**

Protectors for evaporators were then discussed, as were shut-off valves and the possible effects of iso-butane. Harry G. Hayes, Absopure's Chief Engineer, seized this lull in argument to make the following statement:

"There has been one excuse so far for the multiple system. It may be installed cheaper than any other system, and that has been responsible for the apparently great popularity of the system. That service can be secured in no other way. A small individual system, of course, may be installed in any apartment house. It can be made very cheap and it should not differ more than 25 or 30 per cent in relation to the cost of multiple systems. It is possible to make those individual systems with an amount of refrigerant as low as one pound. We do that and anyone else can do it.

"To do away with multiple systems in this town would keep away 75 per cent of our business locally. Have we the right to weigh the cheapness and popularity on one hand, and the safety of the citizens on the other? I will say that any system may be put in safely and will be safe so far as it is humanly possible to make it so, but it is not foolproof."

Mr. Hayes was answered by John Usher of the Mid City Heating Corp., who has acted as an ex officio member of the industry committee. Mr. Usher claimed that sulphur dioxide in multiple systems was safe enough. Said he:

"I would like to draw your attention to the condemnation of multiple systems based on the Commissioner's report. There would have been no accidents if there was a detectable odor. Had any of these cases had a unit system refrigerator there would have been no deaths. The code that we have prepared will correct. I believe, all of the cases we have had in the past. A lot of this is newspaper talk. I am trying to contend that sulphur dioxide is absolutely safe in the multiple system because it cannot be condemned without some evidence. You have no evidence to show that sulphur dioxide has killed any one."

To this statement Alderman Ross countered: "We have no evidence that it has not killed any one. Presuming there was only one bed-ridden person in a room—the odor would not mean anything. If you have an indirect method that is not dangerous to human life why don't the manufacturers take advantage of those things?"

**Brine System Discussed**

Alderman Ross's query provoked a considerable discussion of the brine system, during which time R. W. Kritzer of the Peerless Co., which has installed a large number of brine systems in Chicago, calculated that brine systems cost at least three times as much as direct expansion multiple systems.

While the attention of the group was still on the brine system, Frigidaire's Mr. Smithson again gained the floor to remark:

"We make both multiple and individual unit types. Let us assume that we have an apartment building here with one of our systems installed with an average of 4 to 4½ lbs. gas in each of the evaporators, which makes up the total amount. According to our service records in the largest cities in the country, New York, Philadelphia, Chicago and others, only 10 per cent of our leaks come out at the point other than the evaporator or compressor. Now when you put 20 units in a building have you got a greater hazard? With a multiple system, when a defect occurs, it is possible to shut off the evaporator."

Right back at Mr. Smithson came A. R. Stevenson of the General Electric Co. After apologizing to the other members of the industry committee for feeling it necessary to make a statement, he protested:

"I wanted to take a little exception to this idea that the 20 individual systems are more dangerous than one multiple system. I listened to the evidence presented at the coroner's jury hearing of Painter case and it was perfectly evident to me that there had been a great deal of gas escape in that room. Probably more than 20 pounds had escaped. It is going to come out greater over a multiple system than with the individual unit. I therefore contend that the individual system is not as dangerous as one big system connecting 20 refrigerator cabinets."

Continuing where Mr. Stevenson left off, Mr. McNally of the Health Dept. observed:

"Dr. Kegel read over some histories to me the other day and there is one point uppermost that I wish to impress upon your minds. If we had had single units in these various cases—people have had the gas escaping, many of them work a day and then take sick. If you have two or three pounds of any gas it would escape and the people would not have enough to kill them. That is a point in favor of the unit system. All of these gases are poisonous. Sulphur dioxide is poisonous. They cannot bring up anything to show that it is not poisonous. Sulphur dioxide is causing accidents every day, the same as other gases. Just the other day we had a report of an apartment building where every one was driven out because of sulphur dioxide gas escaping.

"I remember a case some time ago where 18 people were killed at Armour's and later on five more, on account of ammonia leaking. Carbon dioxide will kill. So if you get a system that has a small amount of gas the hazard is less. The whole thing is an engineering problem. We still have leaks in our gas stoves, and our deaths from illuminating gas and carbon monoxide are on the increase."

**Dr. Kegel Concludes Remarks**

In further substantion of his position, Dr. Kegel offered the following remarks as his concluding argument:

"We take into consideration all the things Dr. Taylor spoke of with regard to good points of mechanical operation. Those virtues are well known to everybody. We feel that there is a difference between dangerous and non-dangerous gases, and dangerous and non-dangerous methods which should be taken into consideration. It is possible to accomplish the same thing by employing non-dangerous methods. Now with regard to making multiple systems safe, we interviewed quite a number of engineers and they told us that it was impossible to provide a system that would not leak—that accidents would happen regardless of the precautions which would be taken.

"We do not want to go back to the same thing that has caused the deaths of these ten people. That is the thing we are going back to by arguing about the multiple systems. Now even if it is a question of economics I am sure that all those exposed to these deaths would not go back to the same system again at any cost.

"With regard to sulphur dioxide, the Health Department has had individuals come in right along who have been exposed to it and who are suffering from complications from such exposure. I saw a man just yesterday who was exposed four months ago. There was a leak in the system and he ran into the basement and ran out again. Today that fellow has lost almost 30 pounds and appears to have tuberculosis. I believe this is the right time to make an investigation of all those individuals who have been exposed to sulphur dioxide gas; and we will find many of them who are suffering from coughs, irritation in the lungs, scars, contractions in the bronchi, and that they will never get over those conditions.

"There is also the health hazard. Now the patient I spoke of only took a couple of breaths of this sulphur dioxide. Supposing 200 or 300 pounds leaked into an apartment building at night and people are awakened and they had to rush through the hallways to get out. They would get enough gas to injure them for the rest of their lives. Multiple systems will, in some way, cause no end of trouble. It can be obviated. There is a way around it and the way has been shown to you. We have to stand on this thing and we cannot expose people to these obnoxious gases."

Followed then an impassioned plea from T. F. Howe, attorney for General Motors, for the multiple system. He cited the great number of installations of multiple systems made by Frigidaire, and pointed out the absence of damage suits against his company. T. E. Williams arose to assert that Frigidaire avoided patent suits by escaping responsibility for local installations through a clause in their contract with agents.

Senator Essington moved for adjournment, but was interrupted by Attorney Sullivan of the Board of Education, who orated at length about his own experience with a leaking multiple system. Alderman Eaton introduced Dr. Thompson of the U. S. Public Health Service, and the latter commended Commissioner Kegel for his diligence in ferreting out information on the subject.

Before the meeting was finally adjourned, Gerald Gearon of the Boiler Inspection Department announced that he had a code in preparation, which would include provisions for the large ice plants as well as for multiple systems and individual units.

## CORRECTION

Arnold H. Kegel, Chicago Commissioner of Health, writes that an error has been found in the minutes of the meeting between representatives of the industry and of his department in his office June 27. The minutes were published in full in the July 3 issue of the NEWS.

Lines two and three of column two, page four of that issue should read "An instance was cited where an intoxicated man," etc., instead of "Mr. Cappels then cited an instance where an intoxicated man," etc., according to Commissioner Kegel. The error was on page 3, line 5 of the copy of the minutes sent to the NEWS.


# Seven Record Months Demonstrate Value of KELVINATOR Franchise

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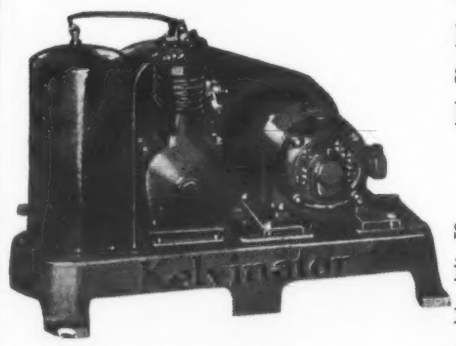


*Model WR-40. 1 H. P. water-cooled unit with water-cooled compressor head. Specially designed to meet needs of large commercial installations such as cold rooms, walk-in refrigerators and multiple apartment house installation.*

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**Detroit, Mich.**

# CHICAGO CODE HEARING

## ALDERMEN LISTEN TO ARGUMENTS ON MULTIPLE SYSTEM

### NOTE

**Below is a stenographic report of the hearing of the Chicago City Council subcommittee on the proposed new ordinance regulating mechanical refrigeration in that city, held in the Council chambers Friday, July 26.**

**Owing to the rapid-fire nature of the various controversies which arose during the hearing, the court reporter was often at a loss to know just who was speaking, and to get down everything that was said. The portent of most of the speeches, however, is faithfully recorded; and the report gives a good picture of the proceedings.**

**Minutes of Meeting Held in the Council Chambers Re The Proposed Refrigerating System Ordinance, Chicago, Ill., July 26, 1929.**

Alderman Eaton, chairman of the City Council sub-committee, opened the meeting at 2:00 p. m., with the announcement that Senator Essington would read pages 9 and 10 of the latest revision of the Manufacturers' Committee Code.

*Sen. Essington:* On Wednesday we discussed with you the provisions of this latest revision, with the exception of pages 9 and 10. At that time I requested that a discussion be postponed until we had a chance to make a full revision. We now present amended pages 9 and 10 which, if inserted with those copies you now have, will complete the combined recommendations of the group.

**See Pages 14 and 15 for complete draft of the ordinance under discussion.**

The first two paragraphs of page 9, down to the designation (d) is that part of paragraph (c) which we discussed last week. Therefore we will start with paragraph (d), reading:

(d) "Except as hereinafter provided no refrigerating system using the direct method of refrigeration shall be installed or maintained above the first floor of any building, other than a building used exclusively for ice making and/or refrigeration and/or chemical purposes, or packing houses, if such system contains:

(1) Over 500 pounds of any refrigerant,
(2) Over 200 pounds of a flammable or irritant refrigerant, or
(3) Over 100 pounds of a flammable or irritant refrigerant if the building, or any part thereof, be used for sleeping quarters.

The first two parts of that do not make any important change in Dr. Kegel's draft. The third provision will cause the discussion, if any, and in that connection I want to say that, as amended by these sheets, the manufacturers' group agree unanimously on every section and every paragraph except the sub-paragraph 3 of paragraph (d).

As to that particular paragraph it was impossible to get unanimity of action among the manufacturers' group. I want to say very frankly there was a dissension of opinion in the group. Certain of the manufacturers, being those who do not manufacture the multiple systems, felt that 100 lbs. was an excessive allowance. Certain others, those who manufacture the multiple system, feel the limit should be than 100.

The majority of the group combined on the recommendation of 100 lbs. with the suggestion that you consider this recommendation and such other testimony as may be brought up before your Committee and that you decide what seems to be appropriate as a maximum pound content of the refrigerant in a building used for sleeping quarters. The suggestion also comes from the combined manufacturers' group that if, as has been indicated in the newspapers and elsewhere, there should be action by the national authorities and a complete and extensive research made and should that recommendation call for what your Committee may find (or as indicated, these 100 lbs.) the manufacturers of course will, on the basis of that finding, abide by it; and it is respectfully suggested that the ordinance then be revamped in accordance with that finding. On that basis and with that explanation, we submit to you sub-paragraph (d) which opens up the entire subject, and also paragraphs (e) and (f), which cover completely the subjects which were covered in Dr. Kegel's draft by paragraphs e, f, g, h, and i. (Reads (e) and (f) as follows):

"(e) Except as hereinafter provided no refrigerating system using the direct method of refrigeration and employing a flammable or irritant refrigerant in excess of 100 pounds shall be installed in any building, other than a building used exclusively for ice making and/or refrigerating purposes and/or chemical purposes, and/or packing house or similar industries located in industrial districts, unless the pressure-imposing element, condenser, receiver and shell-type apparatus (except the evaporators in sleeping quarters of a multiple system) are located in a machinery room which shall not be above the first floor unless in a machinery room located on the roof, which shall have tight interior walls and adequate ventilation and which shall have all of its openings to other parts of the buildings protected with close-fitting and self-closing doors.

"(f) No refrigerating system or any part thereof, shall be placed, located or maintained in any sleeping room as defined in paragraph (v) of section 2156a unless such sleeping room is provided with a window or windows, the total area of which shall be not less than ten per cent of the floor area of such room or space; such window or windows shall open to the outside air, and shall be so constructed that at least one-half of such window or windows can be opened readily."

That covers the entire subject of refrigerant contents. I want to make another explanation at this time. There has been some misunderstanding or fear or misapprehension that this ordinance or draft, or Dr. Kegel's, would interfere with the large commercial installations. I have consulted with the representatives of that group and they expressed themselves as entirely satisfied with the present Code, also with the present administration of that code.

**Suggests Three Separate Codes**

This code, Dr. Kegel's code and our first one, had for its purpose the governing of refrigerating systems. As we have gone deeper into the subject, or as we endeavor to conform with the existing code, we find encroachments creeping in in spite of ourselves. It has not been our intention to encroach upon the subject of large commercial installations, which are entirely covered by their own code at present. It has occurred to us that it might be more simple if, in the final draft of the ordinance, there should be three codes or three sections of the refrigeration code, one dealing with the larger commercial plants which are entirely different from these smaller installations, one for the unit installations in dwellings, and the third for the multiple plants in the smaller commercial enterprises and dwellings.

That is our recommendation as to a revision of Dr. Kegel's code, and with the consideration of these two paragraphs, that completes our recommendations to the Commissioner.

*Ald. Eaton:* Are there any questions that any one would like to ask Sen. Essington? If not, I would like to ask a question or two. As I understood it at the last meeting, out of this entire industry there were only five companies making multiple systems. Am I right?

*Sen. Essington:* I think the statement was made there were five principal companies—a number of smaller companies. There are five nationally known companies.

*Ald. Eaton:* I would like to know what portion of the industry the multiple unit represents.

*R. E. Smithson of the Frigidaire Corp.:* Speaking for my own company, I should say about 15 per cent.

*Ald. Eaton:* If the multiple systems are limited, then only 15 per cent of the industry would be affected. Is that correct?

*Mr. Smithson:* That is correct as far as we are concerned.

*Glen Muffly of the Copeland Co.:* There are, of course, smaller companies than Frigidaire—some whose entire output is multiple systems. We run in about the same proportion as Frigidaire. Ours is about 20 per cent.

*Ald. Eaton:* You say then that only 15 or 20 per cent of the total would be affected, and that includes some companies which are making nothing else but multiples. So, if we abolish multiple systems, will it necessarily put these 20 per cent of out business?

*Mr. Muffly:* It would completely put some of them out of business. They might come back with something different, and in this way use some of their equipment; but as far as they are concerned they have to sell multiple systems today or get out of the market. Of course it is possible they could come back with other units, but everything would have to be reorganized.

*Chas. Cress, Secretary of Chicago Refrigeration Club:* I take exception to Mr. Smithron's remarks. I want to know if the statement is intended to be for national concerns or just applicable to Chicago.

*Mr. Smithson:* National in its scope.

*Mr. Cress:* It would be ridiculous to assume that. In Chicago the relation of multiples to other systems is a great deal more than 15 per cent. Until very recently the multiple systems were doing 50 per cent of the business here, if not more.

*Ald. Eaton:* How many do you think there are in Chicago?

*Mr. Cress:* 75,000 to 100,000 of multiple system apartments. The unit must be the same in comparison. Of single units in one-story buildings there are about 75,000.

*Ald. Eaton:* One multiple unit may have 100 connections—how many installations of mutiple systems do you think there are in Chicago?

*Mr. Smithson:* 15,000 multiple installations. This 15 per cent to which I refer is multiple installations in apartment house buildings.

*Ald. Eaton:* In the controvery between the single unit and the multiple system, you stated, at the last meeting, that there was a difference in cost in favor of the multiple system. You said it was appreciable—between 15 and 25 per cent. Is this a fair estimate: that if multiples are not prohibited the single unit will practically be put out of business? Wouldn't people naturally be putting in the cheaper unit if it is just as good as the other?

*Mr. Cress:* There are a number of places where the multiples would not apply.

*Ald. Eaton:* Does it not mean, in a competitive way, where you could have either—if we permit multiples—that the single units would be out of business. There is an economic difference between the multiple and the single unit.

*Mr. Cress:* One case is where the owner has to furnish all the current and he objects to it. The single unit system owner doesn't have to pay for current and that is all there is to it. There is the difference in the cost of the motor, compressors, thermo controls, electrical connections—all these things enter into the variation in price.

*Ald. Eaton:* You think single units would cost one-third more for, say 25 apartments, than the multiple. You claim there is no danger of eliminating the single unit by the allowance of the multiple?

*Mr. Cress:* The single unit business has grown during the past three or four years.

*Gerald Gearon of the Boiler Inspection Dept.:* You say you are secretary of the Refrigerating Club of Chicago. What does this consist of?

*Mr. Cress:* This includes practically

*(Continued on Page 7)*


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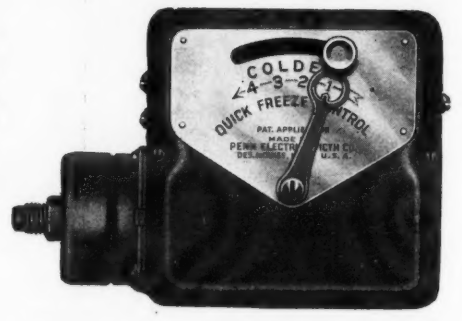


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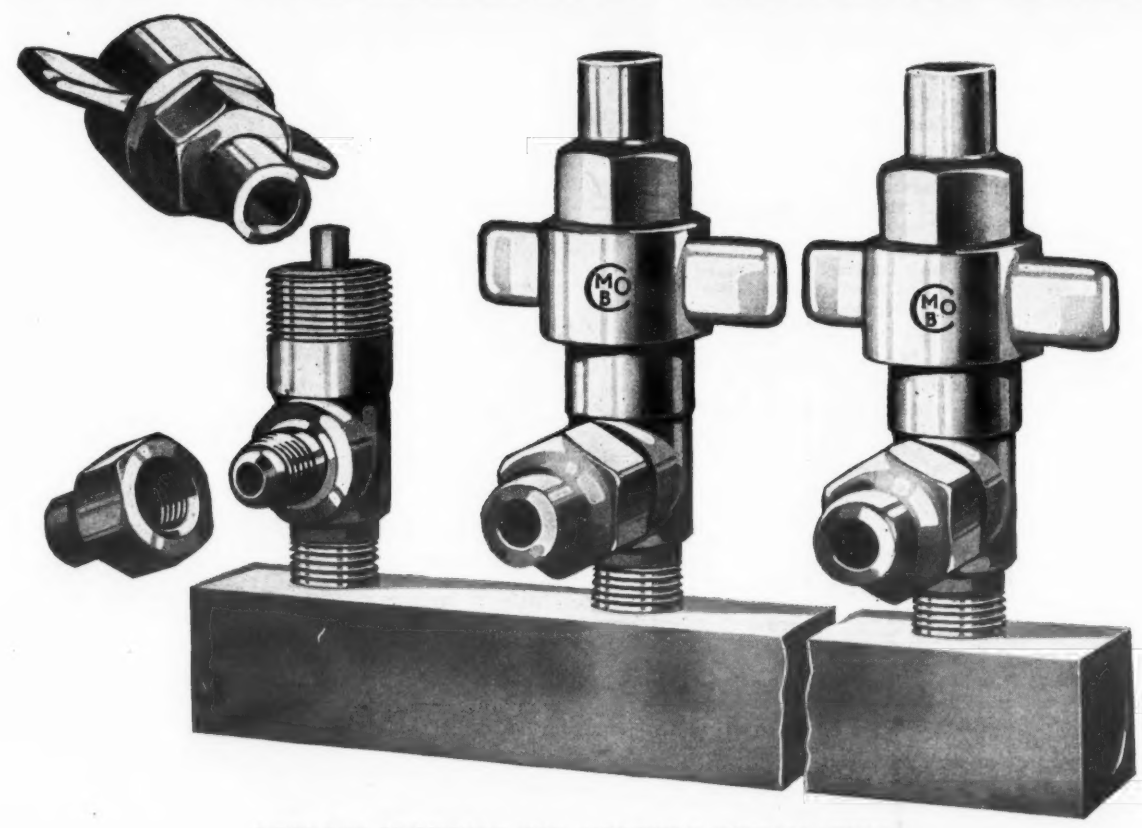

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# MINUTES OF CODE HEARING IN CHICAGO

*(Continued from Page 6)*

all of the largest distributors in Chicago —at the last meeting we had 19 members. Nineteen different firms represented, selling both multiple and single units.

*John Usher:* I am a member of the Manufacturers Committee. I also represent the ice machine manufacturers of Chicago, that is those men who are manufacturing ice machines in the City of Chicago of the size and type that can be used in multiple systems. I represent contractors who build part of their equipment. With reference to putting people out of business I would say that it will put out of business in the city of Chicago, as far as multiple systems are concerned, at least ten firms entirely. They have no connection with individual units, have no source to get them or make them. The necessary equipment would be out of the question. The individual units, to my knowledge, are not being made in Chicago with but one exception. That particular manufacturer I do not believe has a large production, so that if you are considering the amount of labor, the amount of people put out of business, you will put 70 per cent of them engaged in the refrigeration business out of business, off the payroll and on the street.

*Ald. Eaton:* Do you know whether the multiple systems manufactured have any mechanism that would prevent the discharge of the gas on the occasion of a leak?

*Mr. Usher:* I do think they should be given an opportunity, without being wiped out of the picture, to show all points of safety that might be included in a new code that would save any recurrence of what has happened in the past.

*Ald. Eaton:* That is what we have been trying to find out for the last three weeks.

*Mr. Usher:* The first evidence that we had was the announcement the day before yesterday that multiple systems would be wiped out.

*Ald. Eaton:* You know we have been working on these rules for three weeks. We have not stricken them out.

*Ald. Ross:* We have not come to that conclusion. I am speaking for myself. I have not come to any conclusion here. We want facts and information.

*Mr. Usher:* Means for safety, have been considered in the new code—proper inspection, proper testing. We have nothing else except what we have already set up in the new code. Within a reasonable length of time it would be figured out. We don't want to make any trouble for the future.

*Ald. .Eaton:* Speaking of methyl chloride—if a new oderant is devised—have you any knowledge of any such oderant or detector?

*Mr. Usher:* We are willing to accept in a code that such a detector must be used.

*Ald. Eaton:* They claim there is no such thing. Do you consider that there is any successful odorant for methyl chloride?

*Mr. Usher:* I am of the opinion that there is. There is sulphur dioxide.

*Ald. Sloan:* I would like to ask Dr. Kegel a question. Was it your intention to prevent the installations of multiple systems in the city—if so, then why should we be considering them at all?

### Safety Measures Inadequate

*Dr. Kegel:* When we first started on this ordinance we did not know what safety measures the industry would have to offer. We were in the hopes that they would be able to offer safety measures which would guarantee and protect the public health as regards refrigerating gases. They failed to do so and in our opinion the measures which are submitted to us are inadequate. Therefore we felt that multiple systems were not safe.

*Ald. Sloan:* I think that is in hearty accord with what your Department and the Committee have been trying to do.

*M. J. Plonsker of the Plonsker Co.:* I am a graduate mechanical engineer, and have been practicing on refrigeration for nine years. At one time I installed a brine job in an apartment house. This was replaced about a year ago with a system of sulphur dioxide. We installed a brine job only last Fall and our price was so much out of line we could not compete with those installing others. I installed a system in a ten-flat for $3,000. Now you can install that same system in a 40-flat building. We found sulphur dioxide was impractical because you have to use copper tubing; it attacks steel and iron. Then we experimented with methyl chloride. We have about 70 plants installed in from three to 10-apartment buildings. We use extra heavy pipe, forged fittings and we have no trouble at all. Very little service trouble. Until recently we had a lot of plants running.

I think the only way to settle this problem properly is to analyze what happens and what was the cause of the accident. We feel our plants are safe; just as safe as illuminating gas. I am in favor of installing unlimited capacity in a central plant.

We have a chemist here with us today who can tell you something about a mixture to be used with methyl chloride, which gives it a strong odor.

I believe it was necessary that these people were killed. If these things did not happen we would not know it was dangerous. Methyl chloride, with this solution, can be installed properly. An individual installation was the beginning of the refrigeration plant. I remember about five years ago you paid about $400 for one; today you can get one for about $150. Centralization is the thought today.

I have known where sealed units make trouble. There is only one thing you can use and that is a safe refrigerant. You put the compound I have been speaking of in methyl chloride. It doesn't have the bad smell of sulphur dioxide. We have two outlet valves at the iceboxes. When you have a leak you know it and that system is absolutely safe.

You find these cases in kitchenette apartments. I wonder how many people died when illuminating gas was first brought into this country? Are we going to stop progress? A few people get killed. Can we help it? The central plant is the final analysis.

You know how many people are killed every six months in our lead plants? Are you going to eliminate that Why don't we prohibit illuminating gas? In New York they don't allow the multiple plants. Refrigeration is a luxury of the rich. In Chicago none of the multiple plants cost too much—they are a necessity of the poor.

*A. Epstein—consulting chemist:* The chemical we use in non-corrosive. When a condition exists in a pipe it will not gum or plug it up. It is claimed to be harmless, but has a worse odor than sulphur dioxide. We have tried it out in small quantities. If found in quantities of less than one per cent it had a perceptible odor. We have no data on this, experiments have been performed and this work is being conducted by a chemist who is associated with us. The name of this compound is normal-butyl mercaptan. It diffuses with the gas.

*Ald. Eaton:* I have here a copy of a letter from Prof. Stieglitz of the University of Chicago, addressed to Dr. Kegel, referring to your work on mercaptan and he says it won't work. Reads letter dated July 22.

*Dr. Kharasch, Acting Head, Dept. of Chemistry, University of Chicago:* We were naturally interested to see if mercaptan would be compatible with methyl chloride and realizing that in an experiment involving methyl chloride, mercaptan would take too long a time we decided to try out methyl iodide. About one-half of the amount of mercaptan was used up completely, which indicates that mercaptan and methyl chloride will not be compatible in the refrigerating system over a long period of time. Furthermore mercaptan, would be used up very quickly, going over to the disulphide. I think that mercaptan and methyl chloride may work fairly well in a few days in closed systems, but over a period of year or so that mixture would be completely incompatible.

*Joel I. Connelly of the Health Dept.:* I would like to ask whether this new mixture of mercaptan which the Plonsker Co. uses contains methyl chloride. They claim they do not use methyl chloride.

*Mr. Plonsker:* We have been using "Artic" gas. All our labels bear this name.

*Mr. Steffen of Roessler and Hasslacher Co.:* "Artic gas" is pure methyl chloride used for refrigerating purposes, and all our literature makes that clear.

*Ald. Eaton:* Now you know what you are using.

*Sen. Essington:* I previously announced that I never made or sold a refrigerating machine of any kind. I have tried during the last three weeks to bring facts to the Committee instead of newspaper publicity or arguments. Now the advantages of refrigeration are not disputed by anybody. I am impressed by the proposition that in these days we have central water plants, as compared with the old well, largely for safety purposes. We have central heating plants, we have central electrical plants, we have central gas plants. All in the interest of adaptability and better use and more convenience at lower cost. It seems to me that Dr. Kegel thoroughly studied the situation and knows what he is talking about when he states that there is no oderant known at this time to be practical to take the place of the methyl chloride and those other poisonous and noxious gases. I think that experiments are being made.

I am told that in a 40-apartment building these multiple systems can be installed at an approximate reduction in price over the cost of single units of about $50 per refrigerator. There is economy. We all admit the dangers in too big a content. I think they are all agreed that the dangers are minimized to a practical extent by a proper and reasonable limit on the amount of the refrigerant. I think it has been admitted by every one that has appeared before your Committee that every refrigerant is dangerous if not properly used in a system not properly installed. A system properly installed, properly supervised, properly inspected reduces the hazard to a minimum.

References have been made to the other conveniences of present day usages in which there are inherent dangers

*(Continued on Page 8)*

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# CHICAGO OFFICIALS ARE ADVISED AGAINST HASTY ACTION

## MERCAPTAN SHOWN TO BE UNRELIABLE AS WARNING AGENT

*(Continued from Page 7)*

probably in excess of the refrigerating plant. If I were looking at this proposition I would want to weigh this practical advantage and economy, the possibility of securing of this very necessary service at a minimum price to insure proper service.

I look back at the history of these other central plants and it does seem to me that possibly for the City of Chicago, or the Committee, to approach this thing in too precipitate a fashion and to prohibit what may be a success, would be ill-advised. My recommendation is that this Committee use the information which it is able to obtain, and the scientific theories, and the demonstrations available, and approach this matter with a better mind and meet the situation. Knowing that when this industry, that has grown up so suddenly, has been given the opportunity to work with these various problems, that when those demonstrations are made and they have the experience, this ordinance can then be modified at that time, either to increase or decrease this content as may be justified when the record is final. Let there be no abolition, but a reasonable limitation of content, mechanical safeguards, etc.

**Cannot Experiment on People in Chicago**

*Ald. Eaton:* I could endorse a good part of what you said. We admit these gases are all poisonous or dangerous, in smaller units they are less dangerous. You are still in the experimental stage in the large unit. Do you want us to condone that situation and let you experiment on the people? We stated these were minimum requirements, they might be changed in six months. Does it not require action in the face of the 29 accidents? I have a telegram here from Dr. Andrew Hall, Director of Public Health of Springfield, Ill., just sent to the Commissioner, in which he heartily endorses any measures necessary to conserve the lives of people. (Reads telegram.)

*Ald. Taylor:* We must not forget that the Commissioner of Health is charged with the health of the people of Chicago and it is only natural that he should take the position which he has taken. He is endeavoring to dissipate every possible means of causing a recurrence of deaths from this refrigerant. We have to admit that we need large or small quantities in multiple systems with 100 pounds or more, or single units with two pounds. Both are dangerous and the only difference in the two is the degree of danger. The Commissioner feels that he would be willing to take the responsibility for the two pounds rather than the multiple system with its one hundred pounds and—we may have a small unit installed in an apartment which allows gas to escape and have a fatality. It was not the immediate result of the escape of this gas but it was the things that make for after effects, such as he told you about the other day, such as lung conditions, tuberculosis and what not, which might occur.

I can easily agree with him that he is very anxious to protect the lives of the people of Chicago and I know he feels that just as soon as you are able to give him something you are reasonably sure will protect the public, he is willing to go along with you.

There are two possibilities, one the contents of your gas within the container, so that it will not escape; the other the fact that if the gas does escape we should be able to detect it before it has time to do any injury. If we are to have a multiple system we ought to have it safe. We do not want to make it hard for one firm, however, and not so hard for the other.

*Mr. Epstein:* We are not refrigeration experts; we are only chemists. They (University of Chicago Chemistry Dept.) have experimented with methyl iodide and they admit it is not safe. We did not have time to make complete tests.

*Dr. Kegel:* Inasmuch as you have not completed your experiments I think you had better wait until you do complete them.

*Ald. Eaton:* We shall be glad to receive the results of the tests.

*A. E. Smithson:* I believe that the mercaptan experience is purely a matter of public opinion. I don't think it is a question for people to answer here as an individual. Many people are using the multiple system. There is a great difference in the cost to the public. Furthermore in multiple systems operating from a central plant, as against 20 or 30 single units, there is a considerable saving in the operating cost.

We are serving as many as 800,000 apartments using sulphur dioxide gas. We have no fatalities that we know of with all of these systems in operation over a period of six years and therefore it would be rather unfair to rule out multiple systems because we have not had any fatality with those installed.

*Mr. Mason of the Plonsker Co.:* We had the same kind of alarm in 1895 when we had such deaths from sewer gas and coal stove gas. We eliminated those hazards. Sewer gas is just as dangerous as methyl chloride. We have no trouble. Let the engineers get together and maybe we will get some place.

*S. Livingston of Williams Ice-O-Matic:* It might be fruitful if there were three ordinances. We do not manufacture a multiple unit. I do not have any interest in it and don't want to oppose it. If the ordinance were related to a single unit I would be interested in that. Therefore you should separate them. We might expedite matters if we had three separate sections, one for individual units, one for the multiple units and the other one for the large industrial equipment.

*Ald. Eaton:* Unfortunately, neither the Commissioner of Health nor the aldermen can separate this into parts. It is a question of life and death and health in whatever place we find it. Whether large multiple or single units—we have to take a horizontal view. The matter of treatment may be sub-divided, as we have in the code, and then we probably will have to define the different sections dealing with machines.

*Sen. Essington:* My suggestion was for the purpose of clarity. We have followed Dr. Kegel's arrangement exactly. When it comes to your Committee you might well consider the proposition of dividing it into three distinct parts.

**Detector Gas Should Be Carefully Investigated.**

*Dr. W. V. Evans of Northwestern University:* I am not doing any work at Northwestern on these gases but I would like to make a remark or two. It seems to me the people of Chicago would be very unwise to rush into the proposition of putting in sneezer gas or odorous gas as a combination with methyl chloride until it was first thoroughly investigated in a laboratory either of the manufacturing corporation or in a university.

I agree with Dr. Karasch that you cannot tell what will happen by putting a small amount of gas in methyl chloride. You can only find it out by testing the chemical reaction. I cannot talk as authority and the chemist naturally is hesitant about saying anything until he has his facts.

I am averse to trying $SO_2$ in methyl chloride. It is not an odorous substance. It does not have a distinct odor like the mercaptan which would be subject to reaction. There are substances that would work with methyl chloride as a odorant but the work has not yet been done, and until it is done, and done thoroughly, we would make a very grave mistake in introducing any of those substances into methyl chloride, or by allow companies to introduce them, before properly investigating it.

*Ald. Eaton:* You want to continue installing multiple systems. Suppose we discover in six months that it is not the thing. Where are you going to be? Why not stop it now until you make a showing for yourself, as well as the health authorities, that it can be done safely. That is a practical suggestion for you.

**Kegel Flays Disregard for Human Life**

*Dr. Kegel:* The discussion which we have held there this afternoon is the usual discussion which we have heard for many years on the part of commercialism. We have heard expressions with regard to disrespect for life itself. It was only through years and years of fighting, on the part of public health officials and of people who did have a regard for life, that great industries have instituted safety measures from every angle. The Bureau of Mines, the industrial associations, the railroads, one after another, have gone to the expense of millions, even billions of dollars, purely for the sake of saving life.

I have no sympathy for these gentlemen who speak of lives being sacrificed for progress. I disagree with them entirely, they are the first ones to cry the loudest if some of their own dear ones are injured in such a thing as this.

In the history of this industry, which is a very young one, we find that, first, deaths occurred from methyl bromide which was immediately discontinued. The next was methyl chloride. It is now admitted that its use cannot be permitted as a refrigerant, that it must be modified in some way or other.

Now we come to sulphur dioxide. We have had one after another get up and say that sulphur dioxide is safe. How can they say that when we know sulphur dioxide is at least 40 times as poisonous as the methyl chloride which has caused the ten deaths in the City of Chicago. We read advertisements—I am not saying these various concerns are responsible for it—but it is the old proposition of passing the buck to some one else.

We read in the advertisements—"it is non-toxic' or "non-poisonous." It is nothing more than a damned lie. It is purely deceiving the people who are buying their apparatus.

I regret very much that it is necessary for me to make these statements. I have tried from time to time to bring this subject to the industry in a way in which they will understand it.

Commercialism will protect itself as far as it can. Right here there is a disregard for this subject. The men responsible for this industry are not here, they have their representatives here. We cannot impress upon the men who are really responsible, if the disregard is shown as it is here.

These men here are under instructions at this time. They tell their superior officers what is taking place and I imagine their superior officers tell them to stand pat. If they knew the facts it would be different.

I just want to give you a little record on sulphur dioxide at this time. (Reads the observations of Lehman, who found that susceptible people may be rendered ill, etc.)

Now let us take into consideration the amount of refrigerant. The 100 pounds mentioned would bring about a concentration of more than 14 parts per thousand, more than is necessary to produce suffocation. It would be enough to kill them. If that time ever comes and this leakage should occur in an apartment building during the night, and permeate the entire building, the halls would be saturated with the gas and the people would suffocate going out into them.

Here is the report of the case of Charles —— of New York City. While working with sulphur dioxide apparatus he broke a pipe line. He knew all about sulphur dioxide and he got away as quickly as he could. He suffered dreadfully for two months and then died.

In regard to these gases and the use of them. Mr. Smithson states that no deaths have occurred. Does he want to wait until these deaths do occur. It has occurred with the other two gases and there is no reason why it should not occur with this. The poison is 40 times as dangerous as the one which has caused the deaths.

With regard to multiple units and the responsibility of saying we shall not have multiple units or central units. The position is practically this, it is a relative matter—Mr. Smithson, who has been in to see me several times concerning multiple systems, wanted as much as 300 pounds. They have come down to 100 pounds. It is a matter of multiplying the danger. We want the limit two or five pounds at the most. Certainly 1/150 of the danger can be tolerated in this industry.

*(Continued on Page 9)*

## *Public Welfare The Only Aim*

Editorial from *Chicago Evening Post*, July 25, 1929.

While Health Commissioner Kegel and Acting Corporation Counsel Breen are disputing over the question of jurisdiction in drafting the proposed ordinance governing the manufacture and installation of mechanical refrigerators, word comes from Washington that army experts cannot be employed in testing the various refrigerant gases. The intimation was that the competition between natural ice producers and artificial refrigerator makers has a certain bearing on the present situation, and the war department will not be dragged into it.

That being the case, a word of warning on the proposed regulation may not be amiss. The new law should have but one purpose—that of protecting the public from the possible effects of dangerous gases used in the refrigerators, and in this connection it should be recalled that it is the big centralized apartment house type of unit that has been causing the recent fatalities.

There should be no attempt to load the regulating ordinance with "make work" requirements which serve chiefly to give added employment to mechanics and to boost the cost of installation unnecessarily. Nor should the ordinance by its terms be so construed as to place any unnecessary trade restraints on the manufacturing of the refrigerators, or to discriminate between types, beyond the dictates of human safety.

There has been many an ordinance passed in Chicago legislative history which was camouflaged under the guise of a noble and lofty purpose, and which later was found loaded with "jokers" in favor of one or the other of competing trade, material or labor groups. This new refrigerant ordinance, which is still in the making, must be saved from falling into that category.

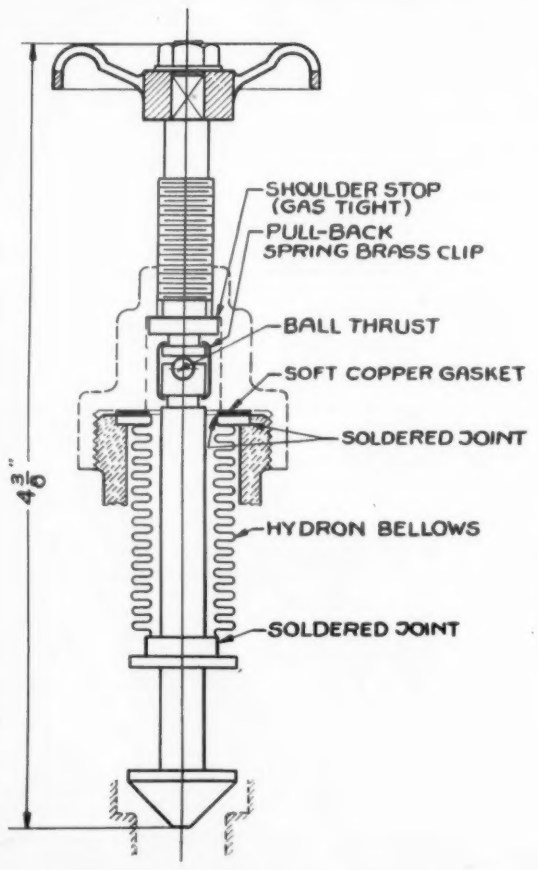

# WHY GAMBLE WITH MULTIPLE INSTALLATIONS

USE

## Clifford Packless Valves

AND

## BE SAFE

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**A Perfect Defrosting Valve**

The following is summarized from the Underwriters' Laboratories Report of January 23, 1929: "The manufacturer is an established concern whose standing needs no comment. The results of the Strength Test indicate that the valve is of such construction as to withstand at least 3500 lb. per sq. in. This indicates suitability for working pressures up to 700 lb. per sq. in. with a factor of safety of 5. The device is practicable, reliable, strong, and can be manufactured with the requisite degree of uniformity. THIS VALVE COMPLIES WITH ALL REQUIREMENTS SPECIFIED IN THE NATIONAL BOARD OF FIRE UNDERWRITERS INSTALLATION CODE FOR MULTIPLE REFRIGERATING SYSTEMS."

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Makers of Hydrons—the Hydraulically Formed Metallic Bellows

THE PENALTY OF AN INFERIOR PRODUCT EXPRESSES ITSELF IN COSTLY DISAPPOINTMENT

# FREMONT WILSON IS STORM CENTER OF INDUSTRY ROW

*(Continued from Page 8)*

The question has just been brought up that if they can control two pounds, they can control 100. The two pounds is contained in pipes possibly not more than 30 inches long; on the other hand, in the multiple systems, it is possibly 100 ft. or 200 ft. or several hundred times more pipe which can leak. Furthermore the leakage is more likely to occur in multiple systems. The single unit is not related in any way to conditions in the building, such as driving nails in the wall, settling of the building, vibration from the street, also the pressure is much lower.

*Ald. Sloan:* People would be educated to know that as quickly as they got the odor there would be danger.

*Ald. Eaton:* I would like to have some information on illuminating gas. Is it not true that gas is practically abolished for purposes of illumination? Today electricity has completely supplanted it.

*Ald Ross:* As regards electricity, are there not certain rules or regulations regarding places to put fixtures—such as over bathtubs, etc?

*Ald. Eaton:* Why should not iceboxes be regulated as well as illumination?

**Frigidaire President Criticized for Absence from Hearing**

*Dr. Kegel:* With regard to the multiple codes I feel that the introduction of the question at this time is purely an attempt to delay matters. There is a possibility that multiple codes would suffice. However, it seems to me, on the part of the industry, that it is rather unfair. We now have accidents in the multiple units. They should want one ordinance purely for its safety. Certainly, on our part, one ordinance will control the situation more easily than multiple ordinances.

With regard to responsibility—that seems to be the matter that is giving us the greatest concern at this time. Consider the men who are responsible for supporting the multiple systems. I believe we only have to refer to Mr. Kritzer of the Peerless Company. We only have to think of the torment that man has gone through. The other day he was in my office and he stated he is willing to spend everything he has to correct the defects and would give anything to prevent them.

Mr. Hayes of the Absopure Company stated he was willing and ready to abolish multiple systems even if it abolishes 75 per cent of his business. If they applied to the Frigidaire Company they would be in the same position. I do not see how they could be in any other. I only wish the president of the Frigidaire Company were here. He would take a different position than he is taking sitting a thousand miles away.

*Ald. Sloan:* To me the gentlemen who have represented the industry have been very much enlightening. I am willing to sit three more weeks if I can learn as much in that time as I have in the past three weeks. I do not think the Commissioner means that these companies have sent messenger boys to sit in with us. I want to ask each and every one of the gentlemen on the committee of the manufacturers here if they have the authority to enter in agreements regarding matters that we might propose, and whether or not they themselves have been given the opportunity to consult and pass on various propositions put into effect. If they have not, I see no reason to spend any more time until we have the people in here who have the authority to speak for the companies concerned.

*Senator Essington:* Every principal manufacturer or nationally known manufacturer of refrigerating machines is represented here. I now state that those representatives are here with full power and authority to pass upon and consent so far as they are concerned. There has not been any attempt to disguise or befuddle things.

*Mr. Smithson:* Our only request is that you do not bar the entire industry until such time as some national board or bureau had has the opportunity to make the demonstration necessary so as to absolutely protect the industry. You set your own standards and limitations and leave it with the understanding that if this demonstration, which will have the confidence of the entire country, shows that these limits are too high or too low, the industry will fit into the situation. It will also be more agreeable if the entire subject is divided into three parts.

*Ald. Eaton:* The code under which these others are operating is manifestly out of date.

**Waited Four Years for the A. S. R. E. To Produce a Code**

*Mr. Gearon:* We have known for years that as far as the refrigeration code and ordinance were concerned, they were inadequate and old and did not cover the situation fully. At the present time we are charged by the ordinance to inspect and regulate these various multiple systems. The industry has grown so fast it has outgrown the ordinance, outgrown the personnel of the Department and we have not been able to do anything with it. We have had meetings with the American Society of Refrigerating Engineers, and have held off for four years waiting for them to get out a new code.

*Ald. Eaton:* We were going to set the pace for the industry. Now somebody is going to do it in Washington.

*Sen. Essington:* We have suggested to other cities that they wait for us.

*Ald. Eaton:* We cannot stand for delay here and wait for Washington to act. Mr. Georon is just swamped with requests for inspection. The Health Department is working night and day trying to take care of the industry. We have got to be equipped with an ordinance with teeth in it that is going to protect the people.

**Aldermen Reserve Right to Pass Judgment**

*Ald. Ross:* I do not believe any subject as broad in its scope and one so vital in its results can be passed on too hurriedly. I believe that all of this discussion is irrelevant, it has no place in the record. After all the thought should be borne in mind that this a public hearing, we are here to gather information from all interested, and irrespective of whether these parties accept or reject our opinion that opinion will be the law. The spirit of cooperation has been great on the part of all concerned.

I want to take this opportunity to congratulate Dr. Kegel and the Health Department for the initiative and for the wonderful and intelligent investigation that they have made on the subject. We agree unanimously that the majority of these gases are deadly. Now the biggest point is: can we properly safeguard those gases now in use, or can we not? If after mature deliberation it is shown that they cannot be made safe, it may be our duty to legislate them out of use.

We have not heard from the boiler inspection division. We should build up as many safeguards as we can to minimize the mortality rate. Let us not, at this time, try to express our opinions, because this committee, as a whole, has had no private conferences up to the present time. We have not formed an opinion.

The facts brought out by the Health Department will be a benefit to the entire country and the world. We must hear from the Boiler Department and the Law Department. We have given the Health Department an opportunity to present its side and the industry has had its chance. I would suggest that this meeting be adjourned and the committee decide on a date for a meeting when they shall decide on further plans.

*Ald. Eaton:* I understand there is a gentleman here who had something to do with the New York code.

*Mr. Gearon:* Our department has not said very much to date because we have the greatest respect for our Health Commissioner and his department. They wanted to consider this special question of health and I believe they are going into it much further than they anticipated. We have just gotten so far in this. We have formulated two or three codes. At the present time there has not been much in them regarding the existing code, which has been a very good one. The question now is whether multiple systems will be prohibited. There is not much use on our working on the code until this question is settled, as this one in its entirety applies to the multiple system.

I feet inclined to agree with Dr. Kegel that it would be safest and easiest to have the industry show us something safe. We have had control of systems that contain possibly more dangerous gas under much higher pressure and present a greater hazard than these machines offer.

*Ald. Eaton:* We will hear from Mr. Wilson of New York.

**Fremont Wilson Tells History of New New York Code**

*Mr. Wilson:* I am a consulting engineer and at the present time have no connection with any concern. Am out on my own. I have been trying for years to get a safety code. The New York Code had been held up for over a year and it was turned over to me in 1926. It was passed in July 1927. Referred to the Welfare Committee and passed in December 1927 unanimously, and went into effect January 1, 1928.

I would like to suggest that a code which has been in existence a year and a half has never been attacked and must be admitted to be a fairly good one. Sen. Essington said he had been told it was not workable. The code is workable. The code is being followed.

The remark has been made here that New York was suffering for refrigeration. I take decided exception to that. No one is suffering for refrigeration in New York. What the gentlemen should have said is that a cheap class of tenement house owners cannot put in multiple systems and save a few dollars at the expense of human lives and that is what I am opposing—cheap construction and commercialism against human lives.

Dr. Kegel has had the courage to stand up to his opinions. I have always been told and was of the opinion that methyl chloride would not kill. I based my opinion upon reading various books. In the face of what the Health Department has brought forth here there is no doubt in my mind now that methyl chloride is dangerous.

Now as to multiple units and the reason why New York would not permit them. They would not permit multiples, first, because at that time the multiple units which were being put in and known as household class were of such a character from the mechanical standpoint that no sane man would think of permitting such poor workmanship.

In regard to the multiple units there is nothing new about them. They have been tried along in the early '90's. They tried them in St. Louis but owing to the numerous leaks, John E. Starr had a resolution put through prohibiting any more. In New York we had a very serious accident and again Mr. Starr protested. In 1895 I was retained by a large hotel owner in New York and was asked why it was he could not pipe ammonia to his various pantries and not have to put it in the brine system which was very costly. I said I knew nothing about it but would find out. I found that John A. Starr was recognized as the authority on such matters. He advised against it and gave me the information he got in St. Louis as well as other places.

As far as I am concerned I shall always oppose multiple units for household refrigeration work. I see no need of taking chances.

*Mr. Ross:* You state that cheap construction and commercialism was the reason why New York code prohibited multiple units. Do not misunderstand me. I am here to be convinced. You are a consulting engineer. Are you connected at the present time with any concern?

*Mr. Wilson:* I am not. I have, at various times, been connected with Servel, Universal, Peerless, Ice Master, Electrolux and several others.

*Mr. Cress:* Are you not slightly reversing your opinion—different from that expressed at an inquest some time ago at the Augustana hospital?

*Mr. Wilson:* I was not and never did testify at any inquest.

*Mr. Smithson:* This gentleman is here talking in regard to safety and the welfare of the public. He is laying considerable stress on the code adopted in New York. I defy any one to show where there is—(There followed a lot of personalities about Mr. Wilson having written to the Frigidaire about a month ago asking for a position.)

*Ald. Sloan:* If you are interested in public health did it not occur to you that the most important thing was the refrigerant?

*Mr. Wilson:* I take the Bureau of Mines as my gospel on refrigerants with this exception, that these gentlemen now come out and show evidence differing with them.

*Mr. Smithson:* Did you not send a telegram to our company asking them for employment, and also write to the Kelvinator and Copeland people stating you would look out for their interests in connection with code work? It has been mentioned that there is such correspondence on file, and we can produce photostat copies of it.

*Ald Ross:* Surely you do not doubt the intention of this committee. You yourself stated that there was commercialism. We want the facts and we are going to get them. I suggest that we cease personalities.

**Women's Club Leader Backs Health Department**

*Miss Eleanor Holtzman, Public Welfare Chairman, Chicago Woman's Club:* We are not interested in personalities. It is a waste of time to talk about it. We are interested in the refrigeration problem. It is one which concerns the family and the home. We will stand back of the Health Department and any one who stands for this sort of humanitarianism.

*Dr. Kegel:* Concerning Mr. Wilson. Several attempts have been made to attack Mr. Wilson for his humanitarianism—it was at my request that Ald. Eaton called upon Mr. Wilson. We have looked him up and we wanted him to express his views at this time. He has made a longer study of it than any of yau, has been studying it for years and I believe he has come to some conclusions which he believes are true.

Controversy followed between a representative of the Steamfitters Union, Mr. Rathbone and Mr. Gearon and Ald Eaton.

*Ald. Eaton:* I understand you have retained Mr. Rathbone for the purpose of following these hearings and starting a law suit.

A member of the Plumbers Union made a talk also.

*Sen. Essington:* It is the opinion of all of the manufacturers that if this code is adopted, subject only to the question of content of refrigerant on which there is an honest difference of opinion, installations can be made safely. The manufacturers rest their case on this code.

*Dr. Kegel:* This is really an admission on the part of the industry, when they speak of limiting the amount of refrigerant which can be held in one of these multiple systems, that there is danger concerning the amount. If you can make them tight why not have one thousand, three hundred or one pound of refrigerant? If there is any difference in the amount you have got to bring it down below the point where it will be a hazard to health.

*Ald. Ross:* Made a motion that the meeting adjourn until ten o'clock Monday morning, which was seconded and passed.

Meeting adjourned at 5:30 p. m.

## Damage Suits Filed

Five suits for a total of $110,000 were filed July 30 by Attorney Harry Pritzker as a result of the death of Mrs. Viola Clark a month ago, for which escaping methyl chloride was blamed by a Coroner's jury.

The suits are directed against the Peerless Ice Machine Co., the Roessler & Hasslacher Co., and the 926 Eastwood Avenue Building Corp. Damages of $25,000 each are asked by Clifford H. Clark, husband and Mrs. Margaret Henssler, mother, of the dead woman, for "mental and physical injury." As administrator of his wife's estate, Mr. Clark seeks $10,000 additional damages.

Robert W. Dailey and wife have filed two other suits for $25,000, alleging that they sustained injuries from gas which escaped last April.


# Getting Down to Facts

**A MANUFACTURER prepared to meet inquiries with facts about his product is in a strong position. Facts tell the story concisely and convincingly. Facts are given precedence over unsupported contentions.**

**Confidence in refrigeration units and systems can be retained and increased by proper dissemination of the facts. Tests are the basis for the determination of facts.**

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*The Business Newspaper of the Refrigeration Industry*

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JULY 31, 1929

## The Chicago Situation

ALL praise is due the city officials of Chicago for the fairness and consideration which has marked their efforts to determine the true cause of the fatal accidents which alarmed the public and threw the industry into a turmoil a few weeks ago. Chicago politicians, it appears, are not so bad as one might be lead to believe from newspaper reports of affairs in the second city. Possibly the refrigeration industry has been fortunate in having the investigation fall into the hands of a particularly competent group of men. By comparison, some representatives of the industry revealed themselves lacking, at the various hearings, in diplomacy and strategy, as well as high-mindedness and public interest.

Admitting that the initial investigation by the Coroner was so conducted as to precipitate a flood of publicity, grossly inaccurate and unjust in its effect, the trend of later developments has been decidedly favorable to the industry. Every opportunity has been given to the manufacturers' committee to present evidence of their ability and willingness to insure the public safety.

If the regulations finally established by the City Council are unduly restrictive, the industry will have only itself to blame. The fact that the committee could not agree on safety measures gives the city officials ample grounds for taking the matter in hand and arriving at their own conclusions.

A big city may appear slow and cumbersome in performing many of its functions but it can act with startling rapidity when public safety is endangered. So many things can happen, and do happen every day, in a metropolitan center that numerous departments of a municipality are constantly ready to spring into action on a moment's notice. In every big organization which deals regularly with emergencies, no charge is so damning as that of "being asleep at the switch."

Having demonstrated that they were on the job, the Chicago officials saw to it that the public was duly informed to that effect, as might be expected of any politically minded men. They readily agreed, however, that the problems involved were highly technical in character and that the advice of experienced specialists would be needed. Representatives of the industry who offered assistance were recognized and were invited to present recommendations which would safeguard the interests of the industry as well as those of the public.

Alderman Eaton, chairman of the subcommittee of the City Council, has shown himself to be exceedingly fair-minded, as well as highly capable in handling the proceedings. He, and his associates on the committee, have been quick to detect any maneuver aimed to gain competitive advantage. It might be well to remember in passing that, whatever may be the failings of an alderman, he usually knows what is being "put over" and by whom.

The present attitude of Health Commissioner Kegel is especially commendable. Having won his point that danger exists where it was not previously suspected, and having warned both the industry and the public, he has become conscious of the fact that the publicity was, to a considerable degree, harmful as well as helpful. No one realizes better than he that contaminated food is a far greater hazard to health than leaky refrigerators. His department is constantly battling with food poisoning. During the summer months as high as sixty cases of food poisoning are reported to him in one day. Proper food preservation through mechanical refrigeration, he says, would eliminate a large proportion of the ill health from this cause.

Dr. Kegel rightly believes that his prompt investigation of the accidents in Chicago will prove, in the long run, to be highly valuable to the industry. Furthermore, he has expressed a willingness to use his influence and energy in educating the public to a true understanding of the great need for health protection through proper food preservation.

There is every reason to believe that the Chicago situation will result in benefits, in the form of widespread public knowledge, which will more than offset the temporary disadvantage of the disturbance.

## "Navy for Safety---Kelvinator for Health," Says London Agency in Window Display

Kelvinator, the oldest Electric Refrigerator
Safeguard your Health
by arranging all your food to be in a Kelvinator Automatic Electric Refrigerator
Guardians of Nation
SOCIETY OF HYGIENE

**The British fleet, John Bull's proudest possession, is tied up with the Kelvinator electric refrigerator in a striking window display offered by the London Kelvinator Co., Ltd. Attempting to educate the buying public to the idea that electric refrigeration is just as necessary for the protection of food as an efficient navy is essential to the protection of Great Britain's far-flung empire, the London distributor for Kelvinator erected lighthouse symbols on two household models which flank a miniature battleship.**

## COMMERCIAL UNIT BUILDERS CONDEMN UNFAIR COMPETITION

### Refrigerating Machinery Association Frowns on Methods Used By Public Utility Salesmen

THE REFRIGERATING MACHINERY ASSOCIATION
Suite 705 Park Building
Philadelphia, Pa.

June 28, 1929.

Electric Refrigeration News,
Detroit, Michigan.

**Re: Central Station Merchandising Methods**

Your letter of May 8 has been referred to this Association for consideration. This letter was read at our recent meeting at Hot Springs, Va., and after some discussion was turned over to the undersigned, Secretary of the Refrigerating Machinery Association, for reply, conveying the opinion of those present at the meeting.

Several members of our Association expressed their views on the subject of the Merchant and Evans complaint and the questions of co-operation and competition with central stations; some calling attention to the fact that they had no definite opinion to offer wtih regards to the Merchant and Evans suit, since the type of business which they did did not conflict with the kind of business done by Merchant and Evans, and some opinions were also expressed to the effect that they had not come into competition with the central stations but rather had found them helpful to everybody. Others expressed their opinions in a very different tone, stating that they had objected very seriously to the type of competition offered by the central stations, who use and abuse their power and influence with customers in what they considered a very unfair way.

A number of instances were cited to the effect that representatives of the central stations hold the power of the central station over the customer as a club in endeavoring to persuade the customer to purchase the machine being handled by that central station to the exclusion of all other machines. Some of these instances were very definite.

Attention was called to the fact that the officials of the central stations denied giving any such authority to their salesmen or representatives, advising that they would correct the fault but that the offense continued. It is quite natural that the officers of the central stations would take such a stand and undoubtedly their attitude has been sincere since it is our opinion that if the central stations condoned such practices by their employes the Government or State authorities would be forced to step in and correct the evil.

It is our opinion that the salesmen of the central stations representing the public utilities are in a position to unduly influence their customers in competition with us, even if the representatives of the central stations actually commit no overt act of unfair influence. The very fact that the customer knows that the utility can use its judgment whether or not to furnish him power, and what charges to make, is sufficient to unfairly influence the customer and cause him to place his order with the central station because he fears doing otherwise. The degrees to which the representative of the utility can encourage this fear on the part of the customer, without committing an actual open breach of law or fairness, are indeed wide and varied.

It is our opinion, therefore, that the central stations should not take the agency for any refrigerating machinery of the so-called commercial class, where engineering is required in estimating and construction. Our opinion has no bearing whatsoever on the propriety or advisability of the utilities handling so-called household or ready-made refrigerating units. There should be a very strong dividing line, however, between the handling of electrical equipment which is sold by ordinary merchandising methods, operated by plugging into regular wiring and requiring no special design and engineering, and equipment such as the larger machinery manufacturers make, which requires special design from the ground up, being a custom-built contracting business.

The most important element in connection with the larger apparatus is the question of special power service. The utility company may do nothing whatsoever to influence the customer to purchase the machine that they are handling, but the very position that they are in of necessity must influence the customer unfairly because of fear on the part of the customer that he will not get the same treatment if he buys from another concern as he would get if he bought from the utility.

Very truly yours,

THE REFRIGERATING
MACHINERY ASSOCIATION,
Fred Nolde, Secretary.

## HOOVER COMMENTS ON ADVERTISING

Writing to the International Advertising Association, which held its 25th anniversary celebration in Berlin last month, President Hoover praised the "economic, social, and international values of advertising" and gave the association his "cordial best wishes" for a successful convention.

The President considered the ethical value of advertising as important as the economic. He said, "The reiterated act of placing one's commercial aims before the public in cold type, day after day, compels one to subject his own motives to a criticism as severe as that which he expects from the public scrutiny. . . . The noteworthy advance in the ethics of business, easily perceptible in the last 20 years, is in no small measure due to the self-examination cheerfully exacted of themselves by business men in their practice of the art of advertising."—*Tide*, June, 1929 issue.

## FAMILY SAVINGS HALVED FOR REFRIGERATING UNIT

Another indication that the American public is becoming electric-refrigeration-minded is to be found in an article, "We Take Our Frugality in Capsule Form," in the June issue of *The American Magazine*.

In this article the head of a family tells his plan of saving money by spending a dollar on something that is not absolutely necessary to the family's existence for every dollar deposited in the bank. Each year since the family adopted the plan, something new has been added to the household by its use. This year $200 was banked, and an equal amount was applied toward the purchase of an electric refrigerator.

Although no mah jongg sets or monoplanes were included in the list of annual savings purchases, the article bought each year generally conformed to the trend of things uppermost on the public's buying mind during that particular period.

The article recommends that other families of average means adopt the same means of "playing a game" with their savings accounts, and at the same time provide themselves with things which could add to their enjoyment of life.

### Thank You!

"As subscribers to your worthy publication, we wish to express our appreciation of the benefits we have derived. Without question, ELECTRIC REFRIGERATION NEWS is the most authoritative publication covering the electric refrigeration industry."—S. C. Ramsdell, Aeroil Burner Co., Inc., West New York, N. J.

"I am pleased to renew my subscription for another year. Without ELECTRIC REFRIGERATION NEWS, those interested in mechanical refrigeration would be absolutely at sea. I find it invaluable in my particular field, cabinets for electric refrigeration." R. E. Wallace, 2909 Ziegle Ave. Cincinnati, Ohio.

### More News

"I would like to see more news about ice cream cabinets—mechanically refrigerated truck bodies, Dry Ice cabinets."—W. W. Dunn, Jr., Partridge, Brunson & Bradley Sts., St. Paul, Minn.

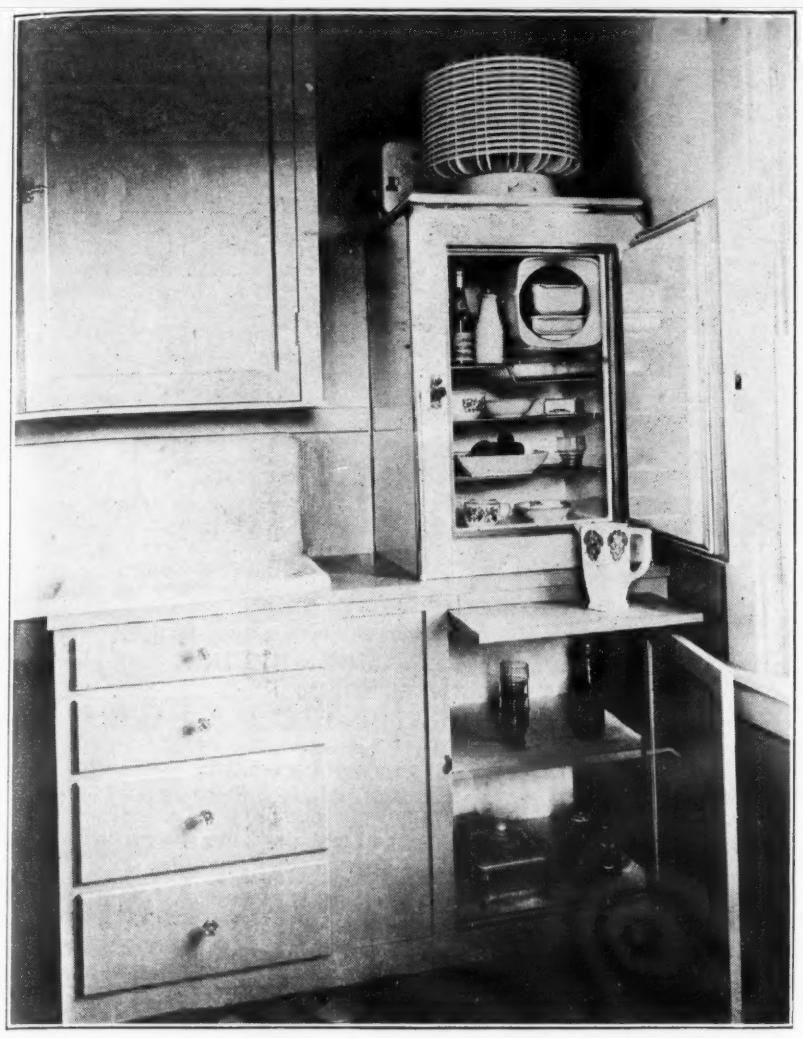
"I would like to see more news about Dry Zero insulation used in refrigerators."—North Judson Electric Co., F. D. Pixa, gen. mgr., North Judson, Ind.

"I would like to see more news about commercial refrigeration."—R. W. Randall, New York Power & Light Corp., Warrensburg, N. Y.

### Sound Pictures

The great scientific accomplishment of the last two years seems to have been taking the sound out of iceless refrigeration and putting it into the silent drama.—*Detroit News.*

# Unique Installation Conserves Space In Small Kitchenettes



**Thirty-six General Electric refrigerators were recently installed in the small kitchenettes in the Crisler Manor, Sacremento, Calif. In order to conserve space in the small quarters the refrigerators were placed on a counter shelf 30 inches high.**

## FORT WAYNE DEALER DISPLAYS HONOR ROLL OF SATISFIED BUYERS

An honor roll of satisfied users is a good business getter, according to C. E. Cromwell of Fort Wayne, Ind. Within a year's time he has sold and installed 216 General Electric refrigerators in Fort Wayne and vicinity.

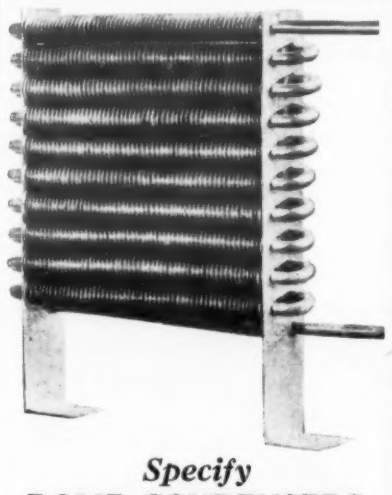
This honor roll, which contains the names, addresses, and occupations of all those who have purchased G. E. refrigerators from Mr. Cromwell, occupies a prominent place in the main window display and in the sales room of his store. It also appears from time to time in newspaper advertising columns.

Mr. Cromwell finds that the honor roll helps establish owner pride, and furnishes him with a long list of references to which prospective buyers can go for testimonials and demonstrations. The list is always in the hands of his salesmen, and forms a strong selling point.

## NATIONAL WEIGHT CONFERENCE RECOMMENDS TWO AND ONE-HALF GALLON ICE CREAM CONTAINERS

The National Conference on Weights and Measures adopted a recommendation at the closing session June 7, favoring the use of the two and one-half gallon ice cream can, thereby reversing a former recommendation. The conference met in Washington, D. C., under the sponsorship of the Bureau of Standards of the U. S. Department of Agriculture.

Proponents of the two and one-half gallon can pointed out its advantages to the small dealer, in allowing a greater variety of flavors, and allowing more frequent purchase of a fresh stock. It was also stated that the two and one-half gallon can, being only half as high as the five gallon can, affords greater ease and sanitation in dispensing.

*Specify*
ROME CONDENSERS
**Made of heavy gauge deoxidized seamless copper tube. One piece construction.**
**Designs for all requirements**
Rome-Turney Radiator Co.
ROME, N. Y.


## NEW YORK EDISON CO. CUTS RATE IN QUEENS TO 8 CENTS KW. HR.

Effective Aug. 1, the top electric rate of the New York and Queens Electric Light and Power Co. will be cut from eight cents a kilowatt hour to seven cents, according to an announcement by M. S. Sloan, president of the New York Edison Co.

"This rate reduction," said Mr. Sloan in making the announcement, "brings the top rate for electricity in Queens down to the price prevailing in Manhattan and Brooklyn. Queens is growing very rapidly and was entitled to have this reduction, equalizing its top rate with that in the larger boroughs, as soon as we could make it."

The New York Edison Co. estimates that this reduction will mean a saving or a million and a half dollars in electric bills for its customers in Queens.

## UNIQUE SIGN RESEMBLES BUILT-IN REFRIGERATOR

The Storz Electric Refrigeration Co., distributors for General Electric refrigerators in the Omaha territory, have a sign that is attracting much attention. This company has a double store building with entrance either side of a huge stone pillar about five feet through.

A metal sign, like the front of a domestic refrigerator, is so placed on the pillar that it has the appearance of a refrigerator built into the stone. So realistic is this sign that passers-by have been known to stop and try the latch on the door.

## "REFRIGERATOR TRUCKOLOGIST" HAS NEW YORK MONOLOPY

His title is "refrigerator truckologist." He has a monopoly on the hauling of electric refrigerators in New York City, built up because he has specialized in that particular type of trucking and because, as his union secretary says, "he is the only man in the city who has definitely gone after that business." His name is Edward Bibinger.

Although his card states that his firm, Edward Bibinger, Inc., does "moving and trucking of all kinds," this enterprising truckman got in on the ground floor with the refrigeration sales forces in New York City and proceeded to make himself the official hauler for all deliveries of "special refrigerators K. D. or erected."

Owning and operating the Kew Vans & Express out of Kew Gardens, L. I., Mr. Bibinger makes his city headquarters at the Seeger Sales Co., 389 Madison Ave.

## NEW DISTRIBUTING COMPANY LOCATES IN PORTLAND, ORE.

The McClurg Schafer Co. has been organized and headquarters established at 728 Sandy Boulevard, Portland, Ore. The new firm has been appointed distributor in Oregon and Washington of the electric refrigerator line manufactured by the O'Keefe Merritt Co. of Los Angeles, Calif.

W. E. McClurg formerly was distributor in Oregon for Frigidaire. F. M. Schafer was associated with the engineering department of the O'Keefe Merritt Co. The service department is in charge of T. L. Westover, formerly a factory engineer.

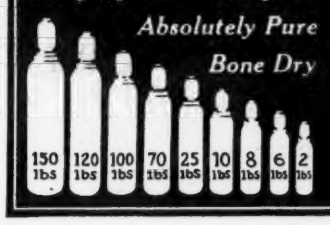
## O. N. Beebe Accepts Position With Copeland Sales Co.

Copeland Sales Co. of Detroit, Mich., announces the appointment of O. N. Beebe, formerly of Frigidaire branch, Norfolk, Va., as zone manager for New England states with headquarters at Boston, Mass.

## Gimbel Brothers To Handle Copeland Line In Milwaukee

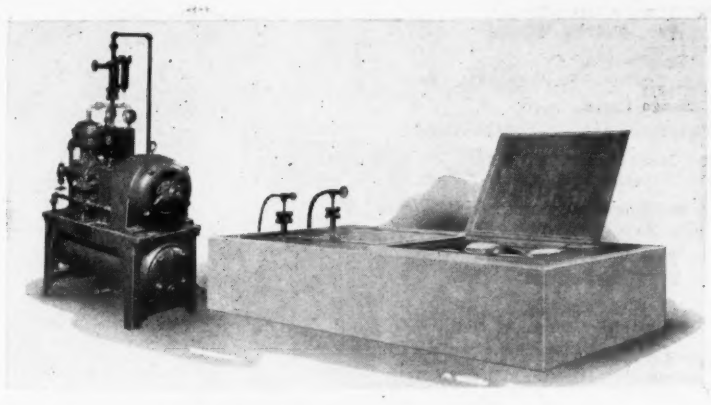
H. S. Heavenrich of the Copeland Refrigeration Co., Wisconsin distributors, announces the appointment of Gimbel Brothers' department store in Milwaukee, as Copeland Dealers.


Every Cylinder Analyzed
Absolutely Pure
Bone Dry




SULPHUR DIOXIDE
for DIRECT CHARGING
also Ton Drums Tank Cars
ANSUL CHEMICAL COMPANY
MARINETTE WISCONSIN





FRICK
**Dairy Farm Refrigeration**

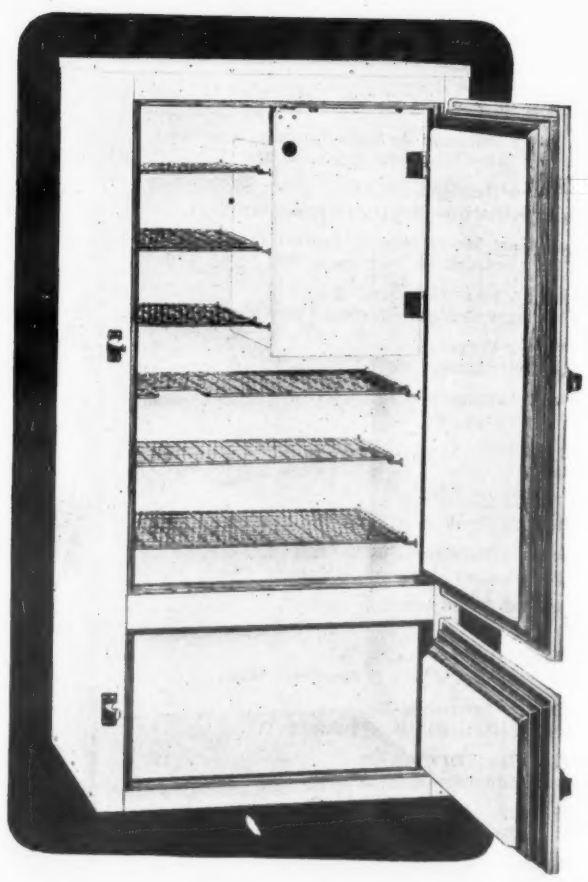
Hand-operated or automatic plants, with either electric or gas-engine drive; all types, using cold water tank or brine system, with or without tubular milk cooler, as desired; make ice when required. Write

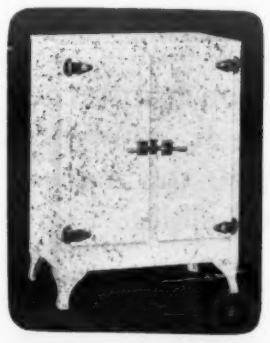
Frick Company
WAYNESBORO, PA., U. S. A.
ICE MACHINERY SUPERIOR SINCE 1882



# BELDING-HALL Builds Special Cabinets for Electric Unit Manufacturers

The fact that Belding-Hall have the largest plant in the world devoted entirely to the production of Steel and All-Porcelain cabinets for electric refrigeration doesn't of itself denote leadership, but what does prove Belding-Hall's superiority is the distinction of building cabinets, year after year, for the leading manufacturers of Electric Units. Not in a single instance has Belding-Hall ever failed to make delivery on schedule. Never has Belding-Hall delivered a cabinet that wasn't exactly to specifications and perfectly constructed. Some Manufacturers require Unit special design and construction. Belding-Hall can supply any type of cabinet wanted. The unlimited manufacturing facilities and vast resources of Belding-Hall permits manufacturing to order at volume prices.





Every Belding-Hall Cabinet is a masterpiece in refrigeration construction. Its positive insulation assures the constant low temperature so necessary for proper preservation of food. The uninterrupted dry cold air circulation made possible by specially designed flues, is an outstanding feature of the Belding-Hall. Belding-Hall Cabinets reduce unit operating time to a minimum. Belding-Hall builds better Cabinets for less. Write for complete information and prices.

BELDING-HALL COMPANY
*Cabinet Division*
BELDING MICHIGAN

# Refrigerants Used by Makers of Complete Refrigerating Systems

Explanation of figures: In column marked "Other Refrigerants":
(1) signifies heliox
(2) signifies argonium
(3) signifies carbon dioxide
(4) signifies iso-butane
(5) signifies pure air
(6) signifies ethyl chloride
(7) signifies alcozol

| | Sulphur Dioxide | Methyl Chloride | Ammonia | Other Refrigerants |
|---|---|---|---|---|
| Absopure Refrigeration Corp.<br>2011 Park Ave., Detroit, Mich. | ..... | X | ..... | ..... |
| American Engineering Co.<br>Kensington Station, Philadelphia, Pa. | ..... | ..... | X | ..... |
| American Ice Machine Co.<br>117 N. Maryland Ave., Glendale, Calif. | ..... | ..... | ..... | 1, 2 |
| Armstrong Machinery Co., Inc.<br>E. 3201-19 Riverside, Spokane, Wash. | ..... | ..... | X | ..... |
| Audiffren Refrigerating Machine Co.<br>285 Madison Ave., New York, N. Y. | X | ..... | ..... | ..... |
| Automatic Freezer Corp.<br>1716 Ford Building, Detroit, Mich. | X | ..... | ..... | ..... |
| Baker Ice Machine Co., Inc.<br>16th and Evans Sts., Omaha, Nebr. | ..... | X | X | ..... |
| Brunswick-Kroeschell Co.<br>New Brunswick, N. J., and Chicago, Ill. | ..... | X | X | 3 |
| Bryant Electric Refrigerator Corp.<br>New Milford, Pa. | X | ..... | ..... | ..... |
| Calvert Electric Refrigeration Co.<br>(Division of Poole Engineering & Machine Co.)<br>Woodbury, Baltimore, Md. | X | ..... | ..... | ..... |
| Carbondale Machine Co.<br>Carbondale, Pa. | ..... | ..... | X | ..... |
| Castle Refrigerating Machine Co.<br>1800 W. Washington Ave., Indianapolis, Ind. | ..... | ..... | X | ..... |
| Champion Electric Co.<br>N. Paulina and Diversey Pky., Chicago, Ill. | X | ..... | ..... | ..... |
| Climax Electrical Refrigeration Co.<br>Clinton, Iowa. | ..... | X | X | ..... |
| Community Service Corp.,<br>19159 John R. St., Detroit, Mich. | ..... | ..... | X | ..... |
| Cooke Electric Refrigeration Co.,<br>30 W. Green St., Chicago, Ill. | ..... | ..... | X | ..... |
| Copeland Products, Inc.,<br>630 Lycaste Ave., Detroit, Mich. | ..... | X | ..... | 4 |
| Copeland Silica Gel. Corp.<br>630 Lycaste, Detroit, Mich. | X | ..... | ..... | ..... |
| Creamery Package Manufacturing Co.<br>1243 W. Washington Blvd., Chicago, Ill. | ..... | X | X | ..... |
| Crosley Radio Corp.<br>Cincinnati, Ohio | ..... | ..... | X | ..... |
| Cyclops Iron Works<br>San Francisco, Calif. | ..... | ..... | X | ..... |
| A. J. Deere Co.<br>Hornell, N. Y. | X | ..... | ..... | ..... |
| De La Vergne Co.<br>New York, N. Y. | ..... | ..... | X | ..... |
| Dersch, Gesswein & Neuert, Inc.<br>4845 W. Grand Ave., Chicago, Ill. | ..... | ..... | X | ..... |
| Devon Manufacturing Co.<br>677 Cambridge St., Worcester, Mass. | ..... | ..... | ..... | 5 |
| Dole Refrigerating Machine Co.<br>1209 W. Washington Blvd., Chicago, Ill. | ..... | ..... | X | ..... |
| Electro Kold Corp.<br>151 S. Post St., Spokane, Wash. | X | ..... | ..... | ..... |
| Electro Vacuum Refrigerator Co., Inc.<br>209 E. 43rd St., New York, N. Y. | X | ..... | ..... | ..... |
| Eskimo Refrigeration Co.<br>914 Columbus Ave., Sandusky, Ohio | ..... | X | ..... | ..... |
| Excelsior Motor Mfg. & Supply Co.<br>3701 Cortland St., Chicago, Ill. | ..... | X | X | ..... |
| Fessler Manufacturing Co.<br>19th and Central, Kansas City, Mo. | ..... | X | ..... | ..... |
| Freezel Corp.<br>Gardner, Mass. | X | X | ..... | ..... |
| Frick Company<br>Waynesboro, Pa. | ..... | ..... | X | 3 |
| Fridgidaire Corp.<br>Dayton, Ohio | X | ..... | ..... | ..... |
| General Electric Co.<br>Electric Refrigeration Dept., Cleveland, Ohio | X | ..... | ..... | ..... |
| General Refrigerating & Mfg. Corp.<br>411 Kraemer Building, Portland, Ore. | X | ..... | ..... | ..... |
| General Refrigeration Co.<br>Beloit, Wis. | ..... | ..... | X | ..... |
| Haven Manufacturing Co.<br>486 Milwaukee St., Milwaukee, Wis. | ..... | X | ..... | ..... |
| Holmes Products, Inc.<br>2 West 46th St., New York, N. Y. | ..... | ..... | ..... | 6 |
| Howe Ice Machine Co.<br>2825 Montrose Ave., Chicago, Ill. | ..... | X | X | ..... |
| Hvid Ice Machine Corp.<br>38 S. Dearborn St., Chicago, Ill. | ..... | X | ..... | ..... |
| Iceberg Manufacturing Co.<br>Gardner, Mass. | ..... | X | ..... | ..... |
| IcElect Corp.<br>Omaha, Nebr. | X | ..... | ..... | ..... |
| Icemaster Co.<br>Haverhill, Mass. | ..... | X | ..... | ..... |
| Ideal Refrigeration Supply<br>6318 Wentworth Ave., Chicago, Ill. | ..... | X | ..... | ..... |
| Indian Motorcycle Co.<br>Springfield, Mass. | X | ..... | ..... | ..... |
| Jack Frost Refrigeration, Ltd.<br>Toronto, Canada | X | ..... | ..... | ..... |
| Jarvis Engineering Co.<br>51 Ellery St., South Boston, Mass. | ..... | ..... | X | 3 |
| Kelvinator Corp.<br>14250 Plymouth Road, Detroit, Mich. | X | ..... | ..... | ..... |
| Keokuk Refrigerating Co.<br>Keokuk, Iowa | X | ..... | ..... | ..... |
| Kulair Corp.<br>Philadelphia, Pa. | X | X | ..... | ..... |

(Continued on Page 13, Column 1)

## UNIVERSAL COOLER LANDS CANADIAN APARTMENT JOB

The new Gleneagles apartments in Montreal, advertised as the largest apartment building in Canada, will be equipped with Universal Cooler refrigeration, according to J. H. G. McKee, sales supervisor of the household division of the Universal Cooler Co. of Canada, Ltd. G. P. Bahen and G. J. Gelineau landed the contract.

Two other recent Universal Cooler installations, according to Mr. McKee, are those of equipping the Brighton Beach hotel at Sandwich, Ont., and the St. Joseph's Academy at Amherstburg, Ont.

New Universal Cooler dealers recently established in Canada are: Emond & Cote, Quebec, P. Q., Kellow & Robinson, Leamington, Ont., and the Aikman Supply Co., Amherstburg, Ont.

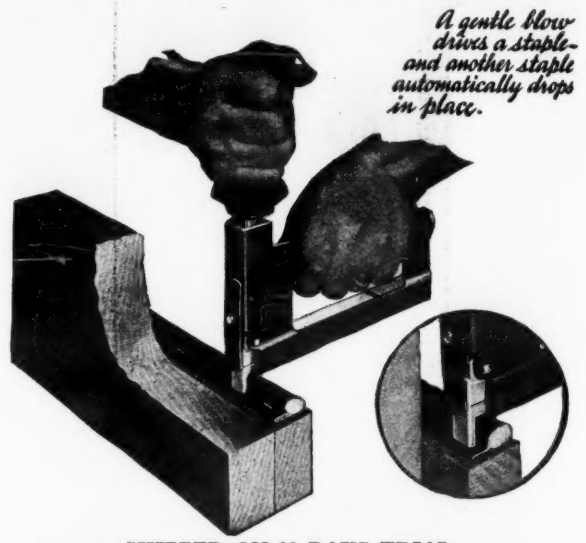
### U. S. Conference Will Study Gases Used in Mechanical Refrigerators

Secretary of Commerce Lamont has initiated a conference to be held in Washington in the near future by the U. S. Bureau of Mines, the Bureau of Standards and the Public Health Service to consider safeguards against gases used in mechanical refrigerators. This conference probably will be followed by a general meeting to which representatives of the mechanical refrigeration industry will be invited.

### F. B. Connelly Co., Billings, Announces Two Staff Appointments

R. H. Howard has been appointed as product manager of the F. B. Connelly Co., Billings, Mont., General Electric refrigerator distributors, to succeed E. A. Lore, who died on July 4. J. K. Armitage has been named field representative for the Wyoming - South Dakota district served by the Connelly Co.


GASKET
QUICKLY APPLIED



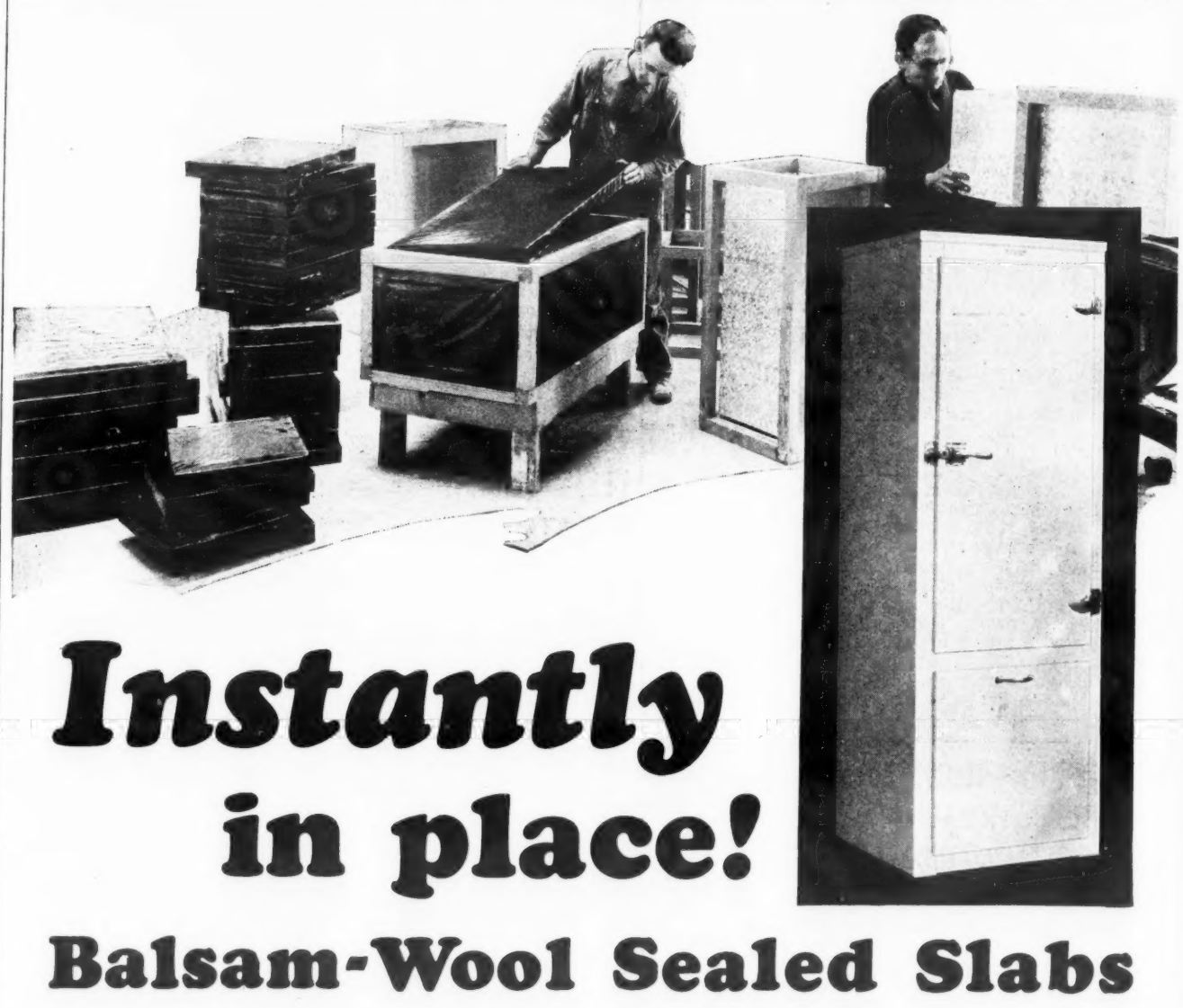

SHIPPED ON 10 DAYS TRIAL
Should be in the tool kit of every installation man, service man, repair man.
8 TIMES FASTER—MORE SECURE
MARKWELL NO. 176
AUTOMATIC REFRIGERATOR TACKING MACHINE
$7.50 Each
STAPLES PUT UP 5,000 TO A PACKAGE

| | |
|---|---|
| 176 "B" Steel, per pkg.....$2.75 | 176 "BTC" Copper, tin plated, per pkg...$3.25 |
| 176 "BC" Copper, per pkg... 3.75 | 176 "BM" Monel, per pkg..... 5.50 |

PRICES ON STAPLES IN QUANTITY ON APPLICATION
Prices are F. O. B. New York

R. N. E. MARKWELL MFG. CO. INC.
200 Hudson Street New York, N. Y.





Instantly in place!

Balsam-Wool Sealed Slabs

MADE to any dimensions—length, breadth, thickness—Balsam-Wool Sealed Slabs are ready to quickly put in place.

They are hermetically sealed on all surfaces and do not depend on uncertain sealing to the framing for protection against condensation. However, their construction allows easy sealing to the frame if this is considered desirable.

These slabs are semi-rigid for easy handling, yet flexible enough to be easily forced to a snug fit.

Balsam-Wool Sealed Slabs are light, efficient, permanent, economical. And they're made of *true* insulation—Balsam-Wool—used wherever the best thermal insulation is required.

Write us and let our engineers aid you in working out the economical production of a more efficient refrigerator.

WOOD CONVERSION COMPANY
*Insulation Division of* Weyerhaeuser Forest Products *Mills at* Cloquet, Minnesota
*Industrial Sales Offices:* 360 N. Michigan Avenue, Chicago
3107 Chanin Bldg., New York 938 National Press Bldg., Washington, D. C. 3084 West Grand Blvd., Detroit, Michigan

*Manufacturers of Balsam-Wool Insulation for Domestic Refrigerators, Motor Buses and Airplanes; Balsam-Wool Refrigerator Car Insulation and Steel Car Insulation; Balsam-Wool Standard Building Insulation*

# F. A. MERRICK NAMED WESTINGHOUSE HEAD

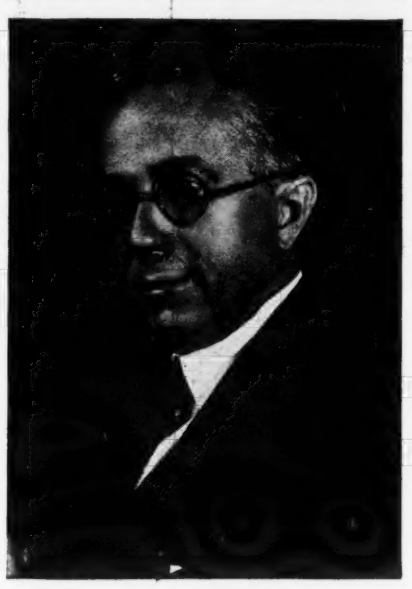
F. A. MERRICK, an executive well-known within the electrical industry was elected president of the Westinghouse Electric and Manufacturing Co. by the board of directors of the company, meeting in New York City, Wednesday, June 26.

In announcing the election of Mr. Merrick to the presidency of the company, A. W. Robertson, chairman, also stated that the board of directors, while accepting the resignation of E. M. Herr, president since 1911, in order that he might go on an extended vacation, had elected Mr. Herr ice-chairman.

Mr. Merrick advances into the position of president from the position of vice-president and general manager of the Westinghouse Electric and Manufacturing Co. He received his technical education at Lehigh University. Shortly after his graduation he was employed by the Steel Motors Co., a subsdiary of the Lorain Steel Co., where he was responsible for many important electrical inventions and where he held the position of manager and chief engineer.

In the acquisition of the Steel Motors Co., by the Westinghouse Co., he entered the Westinghouse organization. He was immediately selected to prepare plans for a plant in Canada and upon the formation of the Canadian Westinghouse Co., Ltd., in 1903, was sent to the Dominion as superintendent of the company. In turn he became manager of works and later vice-president and general manager of Canadian Westinghouse Co., Ltd.

In the World War emergency, he was assigned to organize the operations of



F. A. Merrick

the New England Westinghouse Co., located in Chicopee Falls, Mass., to manufacture rifles for the Russian government. When the United States entered the war, further demands were made upon the plant for American war material.

Mr. Merrick, although required to reorganize and largely re-equip his factory to fulfill American war contracts, completed an order for 60,000 Browning machine guns within 11 months after operations were begun.

After the war, he was located in London, England, for two years as special representative of the Westinghouse Electric International Co., after which he returned to Canada to resume his duties as vice-president and general manager of the Canadian Westinghouse Co., Ltd.

These achievements won for him in January, 1925, the position of vice-president and general manager of the Westinghouse Electric and Manufacturing Co., with headquarters in East Pittsburgh, Pa. In June, 1925, he was also elected a director of the company.

## Servel Receives Large Electrolux Order From Consolidated Gas Co.

A large single order for automatic refrigerators was sent Servel Sales, Inc., Evansville, Ind., on July 24 by the Consolidated Gas Co. of New York City. This order called for over 900 Electrolux gas refrigerators for immediate shipment to the metropolitan district, and supplemented a previous order for 650 units received a few days earlier. The total shipment amounted to over 35 carloads.

These refrigerators will be used in retail sales work in New York City, where the Consolidated Gas Co. is setting a remarkable record. In the New York metropolitan area, known as the world's most competitive market, 231 new apartment buildings have been equipped with a total of 17,077 Electrolux refrigerators within the past nine months.

## Frigidaire Corp. Will Change Working Hour Schedule

Frigidaire Corp., Dayton, Ohio, has adopted a new schedule for workmen, which will become effective August 1. The working day will begin at 6:30 in the morning and end at 4 p. m., one hour earlier than formerly. The night shift will also change one hour, the new schedule being from 4 p. m. till 2:30 a. m.

# Refrigerants Used by Makers of Complete Refrigerating Systems

(*Continued from Page* 12, *Column* 1)

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(7) signifies alcozol

| | Sulphur Dioxide | Methyl Chloride | Ammonia | Other Refrigerants |
|---|---|---|---|---|
| Luitweiler Cam Pump Co.<br>212 N. Los Angeles St., Los Angeles, Calif. | X | ..... | ..... | ..... |
| Mechana-Kold Corp.<br>Arcade, N. Y. | ..... | X | ..... | ..... |
| Merchant & Evans<br>Philadelphia, Pa. | X | ..... | ..... | ..... |
| Narragansett Machine Co.<br>Pawtucket, R. I. | X | ..... | ..... | ..... |
| National Electric Refrigeration Corp.<br>301 Penn Ave., Scranton, Pa. | ..... | X | ..... | ..... |
| F. W. Niebling & Co.<br>406 Elm St., Cincinnati, Ohio | ..... | ..... | X | ..... |
| Norge Corp.<br>2670 E. Woodbridge St., Detroit, Mich. | X | ..... | ..... | ..... |
| Parker Ice Machine Co.<br>San Bernardino, Calif. | ..... | ..... | X | ..... |
| Peerless Ice Machine Co.<br>515 W. 35th St., Chicago, Ill. | ..... | X | X | ..... |
| Phoenix Ice Machine Co.<br>2711 Church Ave., Cleveland, Ohio | ..... | ..... | X | ..... |
| Rauf Manufacturing Co.<br>Bagota, N. J. | X | ..... | ..... | ..... |
| Remington Machine Co.<br>411 E. Front St., Wilmington, Del. | ..... | ..... | X | ..... |
| Rice Products, Inc.<br>315 Beaubien St., Detroit, Mich. | ..... | X | ..... | ..... |
| Savage Arms Corp.<br>Utica, N. Y. | ..... | X | ..... | ..... |
| Schurtz System of Refrigeration<br>P. O. Box 874, Kansas City, Mo. | ..... | ..... | X | ..... |
| Servel Inc.<br>Evansville, Ind. | ..... | X | ..... | ..... |
| Servel-Electrolux<br>Evansville, Ind. | ..... | ..... | X | ..... |
| Stewart Ice Machine Co.<br>3631 Avalon Blvd., Los Angeles, Calif. | X | X | X | ..... |
| Stroh Products Co.<br>Detroit, Mich. | X | X | ..... | ..... |
| Superior Iceless Refrigerator, Inc.<br>Canton, Ohio | X | ..... | ..... | ..... |
| Triumph Ice Machine Co.<br>110 E. 70th St., Cincinnati, Ohio | ..... | ..... | X | ..... |
| Trupar Manufacturing Co.<br>140 Davis Ave., Dayton, Ohio | X | ..... | ..... | ..... |
| Universal Cooler Corp.<br>18th and Howard Sts., Detroit, Mich. | ..... | X | ..... | ..... |
| Vilter Manufacturing Co.<br>Milwaukee, Wis. | ..... | ..... | X | ..... |
| Warner Steel Products Co.<br>Ottawa, Kans. | X | ..... | ..... | ..... |
| Wayne Home Equipment Co.<br>Fort Wayne, Ind. | X | ..... | ..... | ..... |
| Welsbach Company<br>Gloucester City, N. J. | ..... | ..... | ..... | 7 |
| Whitehead Refrigeration Co.<br>3730 Woodward Ave., Detroit, Mich. | ..... | X | ..... | ..... |
| Williams Oil-O-Matic Heating Corp.<br>Bloomington, Ill. | ..... | X | ..... | ..... |
| Wolfe Engineering & Mfg. Co., Inc.<br>1408-14 Vernon St., Harrisburg, Pa. | X | ..... | X | ..... |
| X. L. Refrigerating Co., Inc.<br>1834-42 W. 59th St., Chicago, Ill. | ..... | X | ..... | ..... |
| York Ice Machinery Corp.<br>York, Pa. | ..... | ..... | X | (3) |
| Zanesville Engineering Corp.<br>Zanesville, Ohio | ..... | X | X | ..... |
| Zerozone Corp.<br>929-1011 E. 95th St., Chicago, Ill. | X | ..... | ..... | ..... |


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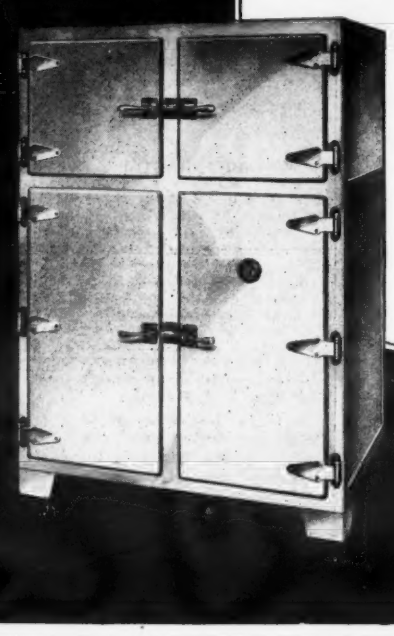

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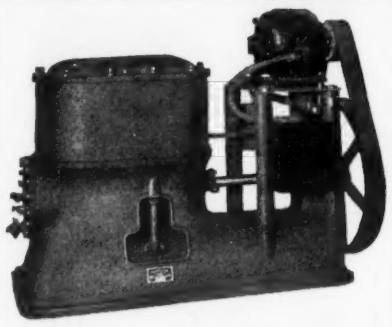

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# CHICAGO CODE

## *Industry Committee Offers New Refrigeration Ordinance*

**(See page 6 for minutes of meeting at which this proposed code was presented)**

**AN ORDINANCE**

Regulating the design, construction and installation of refrigerating systems circulating any volatile substance to produce refrigeration.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHICAGO:

Section 1. That the Chicago Code of 1922 be and is hereby amended by adding the following article immediately after Section 2156 of Article XXXV.

**ARTICLE XXXVA—REFRIGERATION SYSTEMS.**

Section 2156a. REFRIGERATION SYSTEMS—REGULATED AND INSPECTED—DEFINITIONS. It shall be unlawful for any person, firm or corporation to install, or cause to be installed, or to maintain, contrary to the provisions of this Article any refrigerating system, machine or plant or any unit or major part thereof, which supplies refrigeration by the expansion, evaporation, or circulation of ammonia, butane, carbon dioxide, dichloromethane, dichloroethylene, ethane, ethyl chloride, isobutane, methyl chloride, propane, sulphur dioxide, trichloroethylene, or any substance declared dangerous to health by the Board of Health.

For the purposes of this ordinance, the following definitions shall apply:

(a) "APPROVED," approved by the Commissioner of Health.

(b) "CONTAINER," a cylinder for the transportation of refrigerants constructed to conform to the regulations of the Interstate Commerce Commission.

(c) "DIRECT METHOD OF REFRIGERATION," one in which the refrigerant is circulated to the material or space refrigerated.

(d) "EVAPORATOR," a container in which a refrigerant is expanded or vaporized to produce refrigeration.

(e) "FLAMMABLE REFRIGERANT," any refrigerant, the vapors of which will burn or explode when mixed with air, as ethyl chloride, methyl chloride, and the hydrocarbons.

(f) "FUSIBLE PLUG," a device having a pre-determined melting point and used as a fusible-member for the relief of pressure.

(g) "HYDROCARBON REFRIGERANT," one having only hydrogen and carbon in its chemical formula as ethane, propane, isobutane and butane.

(h) "INDIRECT METHOD OF REFRIGERATION," one in which a liquid, (such as brine), cooled by the refrigerant, is circulated to the material or space refrigerated.

(i) "IRRITANT REFRIGERANT," any refrigerant which attacks the eyes, throat or lungs, as ammonia and sulphur dioxide.

(j) "LIQUID RECEIVER," a vessel permanently connected to the high pressure side of the system for the storage of refrigerant.

(k) "MACHINERY ROOM," a room, other than refrigerated spaces, in which is located any pressure-imposing element, condenser, receiver or shell-type apparatus.

(l) "MULTIPLE SYSTEM," a refrigerating system, in which the refrigerant is delivered from a common source to two or more separate refrigerators or refrigerated spaces or containers, each containing one or more evaporators.

(m) "PRESSURE-IMPOSING ELEMENT," every device or portion of the equipment used for the purpose of increasing the pressure upon the refrigerant.

(n) "PRESSURE-LIMITING DEVICE," a pressure or temperature-responsive mechanism for automatically stopping the operation of the pressure-imposing element.

(o) "PRESSURE-RELIEF DEVICE," a pressure-relief valve, a rupture member, a fusible plug or other approved device for relieving the pressure.

(p) "PRESSURE-RELIEF VALVE," a valve held closed by a spring or other means, which automatically relieves pressure in excess of its setting.

(q) "REFRIGERANT," the chemical agent used to produce refrigeration.

(r) "REFRIGERATING SYSTEM," a combination of apparatus in which a refrigerant is circulated for the purpose of extracting heat.

(s) "RUPTURE MEMBER," a device which will automatically rupture at a predetermined pressure.

(t) "SEALED UNIT," one which operates without stuffing-box and/or which does not depend upon contacts between moving and stationary surfaces for refrigerant retention.

(u) "SERVICE VALVE," a key-operated shut-off valve in Class "C" and "D" systems used only during shipment, installation, or repair, or in the case of emergency.

(v) "SLEEPING ROOM," is a room including connecting alcove, dinette or kitchenette and/or any directly connecting room or suite of rooms not separately inclosed with less than a total of four thousand (4,000) cubic feet of space, or combined space, occupied by person, family or group of persons, any part of which space is used for sleeping purposes, as evidenced by the presence of a bed, day-bed, in-a-door bed, couch, davenport, crib, cradle or bedding in any such rooms or connecting suites.

(w) "STOP VALVE," a shut-off valve for controlling the flow of refrigerant during normal operation or emergency.

(x) "UNIT SYSTEM," one which can be removed either with, or separately, from the space refrigerated without disconnecting any refrigerant-containing parts.

Section 2156b. PERMIT AND APPROVAL REQUIRED—PLANS AND SPECIFICATIONS. Plans for every refrigerating system to be installed or mantained in the City of Chicago, shall be submitted to the Commissioner of Health for examination and approval; and no such system, or any major part thereof, shall be installed unless a permit has been issued by the Commissioner of Health authorizing such installation.

Provided, however, that only the general plans and specifications for each type or model of Class "D" unit systems shall be submitted to the Commissioner of Health for examination and approval. Based on the inspection and approval of such types or models of unit systems, a general permit shall be issued by the Commissioner of Health, authorizing the placing or installing of such approved types or models. Such permit shall not authorize the placing or installing of such system in any sleeping room.

No further permit shall be required by the Commissioner of Health for the sale, offering for sale, delivery or placing of such approved unit systems, except as follows:

(a) Where a refrigerating system using the direct method of refrigeration is to be placed, located or maintained in any sleeping room, as defined in paragraph (v) of Section 2156a, a special permit, in duplicate, shall be secured by the person, firm or corporation selling, installing, placing or maintaining a refrigerating system in such sleeping room. A copy of such permit shall be retained by the person selling or supplying such refrigerating system; and the original shall be retained by the person, firm or corporation maintaining such refrigerating system, and both parties shall be equally responsible for the procuring of such permits.

(b) For all refrigerating systems except unit systems, plans shall be submitted and an approval and permit secured.

Section 2156c. CLASSIFICATION. Refrigerating systems shall be classified according to the total weight of refrigerant contained in them or required for their proper operation.

(a) A Class "A" system is one containing one thousand pounds (1000 lbs.) or more of refrigerant.

(b) A Class "B" system is one containing more than one hundred pounds (100 lbs.) but less than one thousand pounds (1000 lbs.) of refrigerant.

(c) A Class "C" system is one containing more than twenty pounds (20 lbs.) but not more than one hundred pounds 100 lbs.) of refrigerant.

(d) A Class "D" system is one containing twenty pounds (20 lbs.) or less of refrigerant.

Classes "A" to "D" inclusive shall be designated as either single unit or multiple systems.

Section 2156d. PERMIT AND INSPECTION FEES. Permit and inspection fees in accordance with the following schedule of rates shall be paid in advance to the City Collector for the issuance of a permit and inspection of every refrigerating system, for which such permits or inspections are required by this Article.

**SCHEDULE OF FEES**

| | Commercial Systems | Residential Multiple and Remote Systems | |
|---|---|---|---|
| | | Each Pressure-Imposing Element | Each Evaporator |
| Class A. | $10.00 | | |
| Class B. | 5.00 | $5.00 | .50 |
| Class C. | 5.00 | 5.00 | .50 |
| Class D. | 5.00 | 5.00 | .50 |

No other permit shall be required by the city of such installation.

Section 2156e. INSPECTION, TESTS AND APPROVAL. Every refrigerating system except those covered by general permit shall be inspected by the Commissioner of Health with a view to determining that all parts thereof are tight and constructed in such a manner as to prevent the escape of any gases or substances dangerous to health or injurious to foods, condiments or drinks.

(a) It shall be the duty of any person, firm or corporation installing any Class "A", "B", "C" or multiple and remote refrigerating systems to apply tests required by this Article.

(b) Tests of any Class "A", "B", "C" or multiple and remote refrigerating systems shall be applied to every refrigerating system or parts thereof installed, before being put into use. Tests of installations in new buildings shall be made before the piping and connections of the system are covered up or made inaccessible.

(c) It shall be the duty of any person, firm or corporation installing refrigerating systems, as aforesaid, to notify the Commissioner of Health whenever any system has reached the stage of construction where it is ready for inspection.

(d) Every part of every refrigeration system, except pressure gauges and control mechanism, shall be designed, constructed and assembled to withstand safely and without injury the following required minimum test pressures:

**Test Pressure in Pounds Per Square Inch**

| Refrigerant Used | High Pressure Side | Low Pressure Side |
|---|---|---|
| Carbon Dioxide | 1500 | 750 |
| Ethane | 1100 | 550 |
| Ammonia | 300 | 150 |
| Propane | 250 | 125 |
| Methyl Chloride | 175 | 125 |
| Sulphur Dioxide | 135 | 100 |
| Isobutane | 135 | 100 |
| Butane | 100 | 50 |
| Ethyl Chloride | 100 | 50 |
| Dichloromethane | 15 | 15 |
| Trichloroethylene | 15 | 15 |
| Dichloroethylene | 15 | 15 |

For other refrigerants not herein enumerated, the Board of Health of the City of Chicago shall determine the test pressures to be applied.

(e) Systems requiring a test pressure of less than one hundred fifty pounds (150 lbs.) shall also be subjected to a vacuum test preferably with the evaporators installed, but valves thereon may be closed to prevent withdrawal of the refrigerant. Under this test a partial vacuum of twenty inches of mercury shall be produced within the system and shall be held for a period of at least one hour, with no appreciable drop.

(f) In the case of every Class "A", "B", "C" and multiple or remote Class "D" refrigerating systems, the Commissioner of Health shall, upon application, issue to the owner thereof a Certificate of Approval, based upon the inspection of the system.

Section 2156f. LIMITATIONS AS TO USE.

(a) No refrigerating system shall be placed in

1. Wards, dormitories, and private rooms of hospitals, asylums, prisons or any place where people are confined or are helpless.

(b) No refrigerating system containing over five (5) pounds of refrigerant shall be placed in:

1. Entrances and exits of public buildings
2. Lobbies, and auditoriums of places of public assembly
3. Dance and assembly halls above the first floor
4. Entrances and exits of buildings not hereinafter classed as public buildings, having less than three thousand (3000) cubic feet of volume per pound of refrigerant used.
5. Underground waiting rooms
6. Subways
7. Diet kitchens of hospitals

Provided, however, that Class "D" systems may be used in such places and conveyances if the indirect method of refrigeration is used, and all refrigerant-containing equipment is placed in some other room provided with natural or mechanical ventilation as hereinafter required. Every opening between the prohibited spaces and such adjoining room shall be provided with close-fitting, self-closing doors.

(c) Except as hereinbefore provided no installation of any refrigerating system using a flammable or irritant refrigerant shall be made in any public buildings such as:

1. Theatres
2. Exhibition, dance and assembly halls above the first floor
3. Buildings containing wards and private rooms of hospitals
4. Asylum dormitories
5. Schools, except Class D systems in kitchens, laboratories and dining rooms.
6. Police stations and jails
7. Underground passenger stations
8. Entrances and exits of buildings

unless all of the refrigerant-containing parts of the system are placed in a separate machinery room not used for habitable or workshop purposes.

Such machinery room shall have tight walls and shall have no communication with any other part of the building, and shall be entered and ventilated from the outside as hereinafter required.

(d) No refrigerating system employing a refrigerant that is flammable or irritant in excess of five hundred pounds (500 lbs.) and using the direct method of refrigeration shall be installed above the first floor of:

1. Business buildings (except buildings used exclusively for ice making and/or refrigerating purposes and/or chemical purposes)
2. Combination residence and business buildings
3. Multiple residence and apartment buildings

and in the basement or on the first floor only if the pressure-imposing element, condenser, receiver and shell-type apparatus are located in a machinery room not used for habitable purposes and provided with tight walls, ventilation by natural means as hereinafter required, and all openings of the machinery room shall be protected by close-fitting, self-closing doors.

(e) No refrigeration system using five hundred pounds (500 lbs.) or more of a refrigerant that is flammable, or irritant shall be used above the third floor of any manufacturing or business buildings if such buildings contain any residence section or portion, and then only if all their pressure-imposing elements, condensers, receivers and shell-type apparatus are located in a machinery room as provided in the preceding paragraph.

(f) No refrigeration system or any part thereof, shall be placed, located or maintained in any sleeping room, as defined in Paragraph (v) of Section 2156a unless such sleeping room is provided with a window or windows, the total area of which shall be not less than ten (10) per cent of the floor area of such room or space; such window or windows shall open to the outside air, and shall be so constructed that at least one-half of such window or windows can be opened readily.

(g) No multiple refrigerating system using the direct method of refrigeration and containing more than one hundred pounds (100 lbs.) of a flammable or irritant refrigerant, shall be installed in any building or part of a building, used as a place of human habitation, provided that such installations shall further be subject to the provisions of the foregoing paragraph (f).

(h) No multiple refrigerating system using the direct method of refrigeration, containing in excess of two hundred pounds (200 lbs.) of flammable or irritant refrigerant, shall be installed or maintained in any office or business building, or parts of such building used for such purposes except as provided in paragraph (e) above, provided, that such installations shall further be subject to the provisions of paragraphs (d), (e) and (g) of this Section. Wherever any such multiple refrigerating system is installed, no pressure-imposing element, condenser, liquid receiver, or main distribution valve shall be installed above the first floor, except on the top floor or roof, and every such part shall be placed in a machinery room provided with suitable ventilation, and every such machinery room shall have every opening to other parts of the building protected by close-fitting self-closing doors.

(i) Multiple refrigerating systems using the direct method of refrigeration and containing over one hundred pounds (100 lbs.) but not to exceed three hundred pounds (300 lbs.) of refrigerant may be installed in any building or part of a building used as a place of human habitation, provided that such installation shall have constant supervision and shall be further subject to the foregoing paragraph (f) of this section and paragraph (q) of section 2156j.

Section 2156g. (REFRIGERANTS.) Permits issued for the installation and maintenance of refrigeration systems and Certificates of Approval issued for such systems, shall state the maximum amount, composition or constituents of the refrigerant to be used. All poisonous or toxic refrigerants used in any direct system of refrigeration shall have a distinct and easily-recognizable odor or characteristic irritating properties or shall be odorized or treated as directed by the Commissioner of Health. Every refrigerant used must be approved by the Commissioner of Health as to the aforesaid properties.

It shall be unlawful for any person, firm or corporation to use or cause to be used any refrigerant in any refrigeration system in excess of the amounts or differing in composition from that stated in the application, permit or Certificate of Approval.

Any person, firm or corporation servicing, or responsible for the servicing of refrigerating systems containing a flammable or irritant refrigerant in a residence building, shall write or indicate on the instruction card required to be posted in proximity to each pressure-imposing element as hereinafter provided, every amount and kind of refrigerant originally placed in, and subsequently added to such refrigeration system, and the date on which the refrigerant was added, together with the name and address of the person who added it.

Section 2156h. (EVAPORATORS — LOCATION, SHIELD AND PROTECTION.) Every evaporator in household refrigerators, unless constructed of sufficient strength to prevent injury in the ordinary and customary use thereof, shall be protected by a suitable shield to insure protection against such injury. Every such evaporator shall be firmly anchored or secured in such manner as to make it immovable.

Section 2156i. REFRIGERATOR CABINET OF MULTIPLE SYSTEMS TO BE FIRMLY SECURED IN PLACE. Every refrigerator, box, casing or refrigerated space containing or enclosing any evaporator of any multiple refrigeration system using the direct method of refrigeration, shall be firmly and securely anchored and fixed to a wall, floor and/or other immovable object, in such a manner as to hold such refrigerator, box or casing enclosing the evaporator securely in place.

Section 2156j. REFRIGERANT LINES, CONSTRUCTION, STRENGTH OF MATERIALS.

(a) All piping and tubing containing refrigerant shall be supported by strong and durable material in such a manner as to prevent excessive vibration and strains at joints and connections.

(b) All refrigerant-containing parts of every refrigerating system must be so rigidly supported, secured or protected that they cannot be disturbed without the aid of tools, or undue force.

(c) All refrigerating piping, tubing, fittings and valves shall be of material suitable for the refrigerant used.

(d) Pipe or seamless tubing made of not less than standard iron pipe size shall be used where a test pressure of one hundred and fifty (150 lbs.) pounds per square inch or less is required, except as provided in paragraph (f) of this Section, and where the test pressure is in excess of one hundred and fifty (150 lbs.) pounds per square inch pipe or tubing equivalent to extra heavy iron pipe shall be used.

(e) All flanged fittings shall be of tongue and grooved type or recessed gasket type.

(f) For refrigerating systems of Class "C" or "D", when not fulfilling the requirements of paragraph (d) of this section, seamless copper tubing, or tubing of other suitable metal of not less than 34/1000 inch wall thickness shall be used, provided that no copper tubing as aforesaid shall be subject to a fiber stress in excess of 6,000 pounds per square inch, and other tubing, if used, shall have the same factor of safety with reference to the elastic limit of the material as that indicated by the requirements for copper tubing, and provided, further, that the joints are sweated, brazed, or properly flared and annealed.

(g) In all Class "C" systems, and in all Class "D" multiple refrigerating systems, using seamless metal tubing of less than standard iron pipe wall thickness for refrigerant line or lines, the refrigerant line or lines shall be enclosed in iron pipe or tubing or other metal enclosure. The enclosure may be of flexible metal at bends or terminals if not exceeding six feet (6') in length and if enclosure is rigidly secured to the walls or other supports.

No metal enclosure shall be required for refrigerant lines between the pressure-imposing element, condenser, or shell-type apparatus, and the nearest riser box, provided these lines do not exceed six feet (6') in length and are located within the refrigerating machinery room where such room is required.

(h) All valves and fitting in such system, except as provided in paragraph (d) of this section, and those at the evaporator, pressure-imposing element, liquid-receiver, or shell-type apparatus, and every connection of tubing shall be arranged in or on a suitable metal box, and/or shall be rigidly attached thereto or to the supports thereof. Every such box shall have an accessible door or removable cover.

(i) All valves except those at the pressure-imposing element and at the evaporators used in multiple systems other than ammonia and carbon dioxide systems, the refrigerant lines of which extend into residence portions of the building, shall be of the packless type.

(j) All line valves as described in paragraph (i) shall have permanently attached hand-wheels, and these hand-wheels shall be easily accessible at all times.

(k) Valves shall be located in the inlet end of every branch liquid line and in the outlet end of every branch suction line, and in the liquid and suction lines of every service outlet of systems described in paragraph (i) of this section.

(l) Every vertical run of metal enclosure shall be sealed or plugged at its upper box connections with a material not affected my moisture or the temperature of the refrigerant lines.

(m) No tubing joint shall be placed in conduit.

(n) Not more than one refrigerator shall be connected to any outlet box. Every such outlet box shall be located within the premises containing the refrigerator, but not within the refrigerated space, and shall be readily accessible at all times. No outlet box shall be located in any hallway, stairway or vertical shaft.

(o) Every opening from or into a metal enclosure for refrigerant lines shall be free from sharp edges which might injure the tubing.

(p) Service valves shall be installed in both connections to every household flooded type evaporator that can be removed from the refrigerator as a unit, in such a manner as to permit the removal of the evaporator with valves attached. This is not required on unit systems.

(q) Every Class B Multiple Refrigerating System extending into any living quar-

*(Continued on Page 15)*

# REVISED ORDINANCE OFFERED TO CHICAGO

(Continued from Page 14)

ters shall be connected by extra heavy pipe. All fittings and valves except for ammonia and carbon dioxide systems shall be forged metal. All valves, except for ammonia and carbon dioxide systems and except at the pressure imposing element and at the evaporator shall be of the packless type. Each such valve or fitting shall be rigidly supported but need not be enclosed. Connections from refrigerator service valves to the evaporator shall be of the same material.

(r) Every liquid level gauge glass shall be of sufficient strength to withstand the high side test pressure and, except those of the bull's eye type, shall have automatic closing shut-off valves and shall be adequately protected against injury, by slotted metal casings.

(s) Every system that is assembled and piped in place shall be tested to the pressure required in paragraph (d) of Section 2156e after installation and shall be proved to be tight before being operated. A dated declaration of such test, signed by the manufacturer or installer, shall be posted in the machinery room within ten (10) feet of the pressure imposing element.

(t) Makers of unit-systems shall test each unit-system to the pressure required in paragraph (d) of Section 2156e for the refrigerant to be used.

(u) No refrigerant line shall be located in any elevator, dumb-waiter or any other shaft containing moving objects.

Section 2156k. SAFETY DEVICES. Every pressure-relief valve, pressure-limiting device and rupture member shall be set to prevent the pressure exceeding the test pressure for the refrigerant used as set forth in paragraph (d) of Section 2156e.

Every Class "A", "B" and "C" refrigerting system, operating above atmospheric pressure, shall be provided with a pressure-limiting device to stop the action of the pressure-imposing element at a pressure less than 90 per cent of the setting of the pressure-relief device on the high-pressure side.

(c) Every pressure-imposing element of a Class "A", "B" or of a Class "C" system using ammonia and carbon dioxide shall be protected by a pressure-relief valve connected into the high pressure side between the main stop-valve and the pressure-imposing element to relieve excessive pressure into the low pressure side of the system or to the outer air through a separate vent. Carbon dioxide installation unless installed in the basement may be discharged into the room.

(d) The low pressure side of every Class "A" or "B" system shall be provided with a hand-operated relief valve for discharging the refrigerant in case of fire, either to the outer air through a separate vent or to a suitable body of water. The hand-operated relief valve shall be located outside the machinery room, or shall be capable of operation from the outside. The handle of this valve shall not be removed.

(e) A rupture member may be substituted for the relief valve in carbon dioxide sytems or systems operating below atmospheric pressure.

(f) Every shell-type apparatus such as liquid receivers, condensers, evaporators, liquid separators and absorbers of Class "A" and "B" systems and of Class "C" ammonia or carbon dioxide systems which can be shut off by stop-valves, shall be equipped with a pressure-relief valve, discharging as hereinafter provided.

(g) No stop valve in any refrigerating system shall be located between a pressure-relief device or pressure-limiting device and the part of the system protected thereby, unless two such devices are used and so arranged that only one can be shut off for repair purposes at any one time.

(h) Every Class "C" or "D" system, unless so constructed that it will not burst due to the expansion of the refrigerant when subjected to abnormal outside temperature such as that generated by a fire, shall be protected by a pressure-relief device.

(i) Every water cooled Class "C" or "D" system so constructed that the pressure-imposing element is capable of producing a pressure in excess of the test pressure and containing more than twelve (12) pounds of refrigerant, shall be provided with a pressure-limiting device to stop the action of the pressure-imposing element if the water supply should fail.

(j) Where an irritant or flammable refrigerant is used in Class "A," "B" or "C" systems, the discharge from the pressure-relief valves on the high pressure side must be conducted to the outside atmosphere or into that part of the low-pressure side protected by the low-pressure relief valve. The discharge to the outside atmosphere from either the high or low pressure side must be not less than twelve (12) feet above the grade, and not closer than ten (10) feet to any opening in any building, or closer than twenty (20) feet to any fire escape. The discharge pipe shall be not less than the size of the relief valve outlet. The discharge from more than one relief valve may be run into a common header, the area of which shall be equal to the areas of the pipes connected thereto. The outlet shall be turned downward.

(k) Where ammonia is used in a Class "B" or "C" system the discharge from relief valves may be into a tank of water which shall be used for no purpose except ammonia absorption. At least one gallon of fresh water shall be provided for every pound of ammonia contained in the system. The water used shall be prevented from freezing without the use of salt or chemicals. The tank shall be substantially constructed of not less than one-eighth (⅛) inch or No. 11 U. S. gauge iron. No horizontal dimension of the tank shall be greater than one-half (½) the height. The tank shall have a hinged cover or if of the enclosed type, shall have a vent hole at the top. All pipe connections shall be through the top of the tank only. The discharge pipe from the pressure relief valves shall discharge the ammonia in the center of the tank near the bottom.

(l) No pipe or fitting connected with or conveying the public water supply for cooling or for any other purpose shall be so connected or arranged that the purity of the public water supply may be impaired. Water used for removing heat from a refrigerating system shall not thereafter be used for drinking purposes.

Section 2156l. MACHINERY ROOMS. Every machinery room and every room adjoining a sleeping room, and containing any evaporator or unit system shall be adequately lighted and shall be provided with adequate ventilation.

Unless otherwise adequately ventilated, the total window area of every such machinery room and every such room adjoining a sleeping room containing an evaporator or unit system shall be not less than ten per cent (10%) of the floor area of the machinery room, and in no case less than four (4 sq. ft.) square feet, and at least half of such window area shall be made to open.

Section 2156m. OPERATING PRECAUTIONS.

(a) It shall be the duty of the person in charge of the premises wherein any refrigerating system is located to exercise due diligence to see that the refrigerating system is properly maintained and operated at all times.

(b) A gas helmet or mask suited to the refrigerant used shall be provided with every Class "A" system, and with every Class "B" system that operates above atmospheric pressure except when carbon-dioxide is used.

(c) Every gas helmet or mask shall be of a type approved by the Commissioner of Health as suitable for the refrigerant used, shall be inspected annually and shall be kept in operative condition in an easily accessible case or cabinet.

(d) Whenever a flammable or irritant refrigerant is drained from any system it shall be discharged into a suitable absorbent or container.

(e) Containers shall not be connected to the system except during period of charging or withdrawing the refrigerant.

(f) In testing with air pressure care shall be taken to prevent the temperature at any point from rising above one hundred and thirty (130) degrees Fahrenheit.

(g) Whenever the losses of a flammable or irritant refrigerant from a residential multiple system are such as to endanger the health or lives of the human occupants of any room or structure in which such refrigerating system, or any part thereof, is located, it shall be the duty of the owner of such refrigerating system to apply suitable pressure or other tests to prove the system tight.

Section 2156n. INSTRUCTIONS AND REFRIGERANT CHARGES TO BE POSTED. (a) It shall be the duty of the owner of any refrigerating system except a Class "D" system, to post and keep conspicuously posted as near as practicable to the pressure-imposing element of such system a card giving operating directions for such system, including precautions to be observed in case of a breakdown or leak. The following shall be included in the instructions and information listed on such cards:

1. Instructions for shutting down the system in case of emergency.
2. The name, address and telephone number of every engineer or operator in charge.
3. The name, address and day and night telephone number for service.
4. The telephone number of the Department of Health, and instructions to notify the Department of Health immediately in case of serious leakage or other emergency.
5. The location of the nearest fire alarm box.
6. The name, address and telephone number of a physician to be called in case of emergency.
7. The date, amount and kind of refrigerant placed in the system at the time of initial charging and every subsequent recharging, and the name and address of the person charging or recharging the system.

(b) The manufacturer of every unit refrigerating system shall mark upon the name or model plate thereof the kind of refrigerant contained within the system. Every Class "A", "B", "C" and multiple Class "D" system shall have the name of the refrigerant painted or affixed in a permanent manner either to the pressure imposing element or to the piping in proximity thereto. The kind of refrigerant and instructions for shutting off refrigerant shall be prominently posted at the branch valves used for shutting off each evaporator or set of evaporaters contained within each refrigerated space.

Section 2156o. (MAINTENANCE AND INSPECTION OF PREVIOUSLY INSTALLED REFRIGERATING SYSTEM.) (a) If any refrigerating system installed prior to the passage of this ordinance is found to have any features that are dangerous, hazardous or detrimental to health, or which presents any fire or explosion hazards, the owner shall alter same to remove such hazards.

(b) Every refrigerating system, except Class "D" unit systems, operated or installed or maintained in the City of Chicago, shall be inspected annually by the Commissioner of Health. Inspection fees shall be paid after the inspection has been made in accordance with the following schedule:

SCHEDULE OF ANNUAL INSPECTION FEES

| | Commercial Systems | Residential Multiple & Remote Systems | |
|---|---|---|---|
| | | Each Pressure-Imposing Element | Each Evaporator |
| Class A | $10.00 | | |
| Class B | 5.00 | $5.00 | $ .50 |
| Class C | 5.00 | 5.00 | .50 |

Section 2156p. (REVOCATION OR WITHHOLDING OF PERMITS AND CERTIFICATES OF APPROVAL.) The Commissioner of Health shall have the right to revoke any permit or Certificate of Approval whenever he finds that the requirements of this ordinance are not complied with. It shall be illegal for any person, firm or corporation to display or attach to any refrigerating system any copy of a Certificate of Approval where the original certificate has been revoked by the Commissioner of Health.

Section 2156q. (PENALTY.) Any person, firm or corporation, violating any of the provisions of the foregoing sections of this ordinance shall upon conviction be fined not less than twenty-five dollars nor more than two hundred dollars for each offense.

Section 2156p. PENALTY. Any person, firm or corporation, violating any of the provisions of the foregoing sections of this ordinance shall upon conviction be fined not less than twenty-five dollars nor more than two hundred dollars for each offense.

Section 2. This ordinance shall be in full force and effect on and after its passage and due publication.

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500 Rooms with Sea Water Baths
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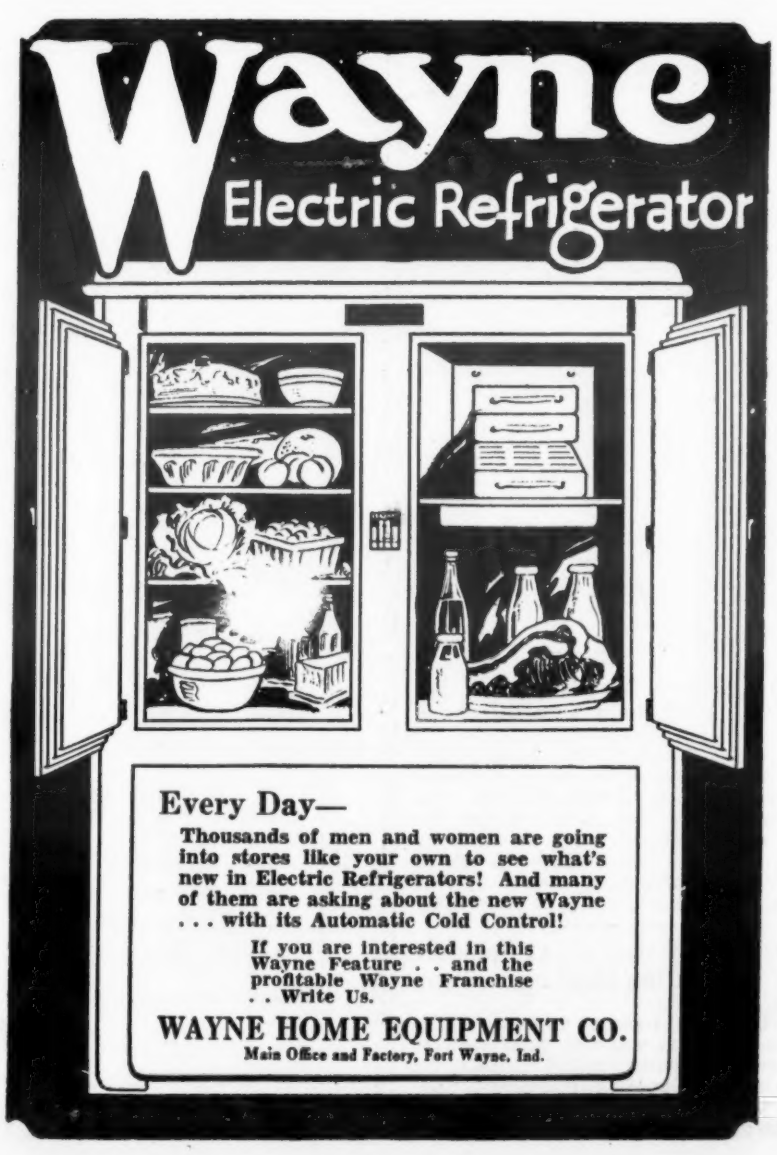

Every Day—

Thousands of men and women are going into stores like your own to see what's new in Electric Refrigerators! And many of them are asking about the new Wayne . . . with its Automatic Cold Control!

If you are interested in this Wayne Feature . . and the profitable Wayne Franchise . . Write Us.

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Main Office and Factory, Fort Wayne, Ind.

# GERALD S. BATAILLE HEADS REORGANIZED ALLING CO., DETROIT

### Large Increase Reported in July Business

Complete re-organization of the R. B. Alling Co., Detroit, Michigan distributors of Copeland electric refrigeration, is announced following the death of the late R. B. Alling, founder of the company.

Gerald S. Bataille, in the electric refrigeration industry since 1915, has been named president and general sales manager; Fred M. Hancock, previously with Copeland Products, Inc., vice-president in charge of commercial sales; Audrienne E. Bataille, secretary-treasurer.

Gerald S. Bataille

New members on the board of directors are Arthur M. Davison, president of the Union Trust & Savings Bank, Flint; Matthew Davison, prominent Flint automobile dealer; George Reid, Detroit manager of the brokerage firm of Prince & Whiteley, New York, and Robert M. Brownson, Detroit attorney.

William Wruck, for 10 years new car manager for Willys-Overland at Chicago, Milwaukee and Detroit, is domestic sales manager; Redmond W. Walsh, formerly with Kelvinator, builders' division sales manager; Robert Slapher, apartment house division manager, and James Taylor, in charge of wholesale sales.

The company will continue in its present recently-enlarged headquarters. Sales in July, according to Mr. Bataille, equalled those for the six previous months of 1929 and were four times as large as those in July of 1928. Sales to date this year were double those in the like period last year. In the last 30 days new agencies have been established at Lansing, Bay City, Saginaw, Monroe, Jackson, Battle Creek, Mt. Clemens and St. John, Michigan.

President Bataille has been connected with the electric refrigeration industry since 1915, except for two years during the war. He has been chief engineer of the Refrigerator Engineering Co., Baltimore; commercial sales manager in the New England states for Kelvinator Corp.; application engineer at the Kelvinator Detroit plant; and director of application for the Harry L. Hussman Refrigeration Division of the Hussman-Ligonier Co., St. Louis. Since April this year he has been connected with the R. B. Alling Co. as sales manager. He is a member of the Americal Society of Refrigeration Engineers and is well known as a writer and lecturer on electric refrigeration.

### Thirty-Day Drive Nets Harper-Meggee $24,000 Commercial Business

Apartment house, hotel and commercial business recently obtained in 30 days of selling effort by Harper-Meggee, Inc., Seattle distributors of Copeland electric refrigeration products, included complete installations in one building with 44 apartments, one with 40, one with 21, one with 20, a fifth with 19 and a sixth with 12; the new $500,000 Cascadian hotel in Wenatchee, Wash., and a commercial unit in Seattle's new "Shopping Tower," a total of $24,000 worth of business. Harper-Meggee recently completed installation of 20 units in Seattle's newest fine apartment house, the Ben Lomond apartments.

### Calco Chemical Co. Buys SO Interests Of King Chemical Co.

The Calco Chemical Co., Boundbrook, N. J., has purchased the sulphur dioxide interests of the King Chemical Co., also of Boundbrook. The sale includes the plant, equipment and trade of the King company. The Calco Chemical Co. is one of the companies owned by the American Cyanamid Corp. of New York

### H. D. Wehrly Speaks At Spokane Ad Club Meeting

H. D. Wehrly, regional manager of the Frigidaire Corp., was the chief speaker at a recent meeting of the Spokane Ad Club, held at the Hotel Davenport, Spokane, Wash. His topic was "Advertising a Million."

# Portland Distributor Features G. E. Poster Advertising on Float in Rose Festival Parade

**The advertising float shown above was entered in the "Merrykhana" parade of the Portland Rose Festival on June 11 by the Arch Electric Refrigeration Co., General Electric refrigerator distributors at Portland, Ore. The design featured in General Electric posters during June was used on the float, while the Western Electric public address system was used to give oral reasons why the bystanders should purchase a General Electric refrigerator. The float was designed by Orr E. Crites, sales manager of the Portland concern.**

## MISSISSIPPI ELECTRIC LEAGUE HOLDS ANNUAL CONVENTION

The Mississippi Electric League held its twentieth annual convention at the Edwards Hotel, Jackson, Miss., on June 24-25. Over 125 members registered, representing electrical contractor dealers, jobbers and central stations.

Officers elected were: E. J. Lenz, Greenville, President; F. B. Stern, New Orleans, first vice-president; J. M. Fried, Vicksburg, second vice-president; A. G. Riddick, distributor of G. E. refrigerators at Jackson, was reelected secretary-treasurer. The executive committee was elected as follows: A. H. Jones, McComb; J. T. Sharp, Jackson; Chas. Koeneman, Jackson, representing the dealer-contractors; Tom Crockett, Jackson; E. E. Armstrong, Gulfport; Ray Scott, Greenville, representing central stations; Leo Hirsch, New Orleans; T. B. Cabell, Jackson; W. R. Herstein, Memphis, representing the agent-jobbers.

### Installs Kelvinator Commercial Equipment in Country Club

Kelvinator commercial equipment has been recently installed in the Lawsonia Country Club at Green Lake, Wisc., by the Harloff-Loprich Electric Co., Madison, Wisconsin Kelvinator distributors.

Three large storage rooms for keeping fresh meats, fruits and vegetables, and dairy products in the club are refrigerated by 2 WB condensing units and 7 cross fin coils. Different temperatures are maintained in each of the rooms. Two large Seeger refrigerators are cooled by a WH condensing unit and a 30-gallon soda fountain is operated by a WF condensing unit. This club is reputed to be one of the finest and most modern in the state.

### Bids Asked For Refrigeration Work In New York Hospital

Bids will be opened by the Commissioner of Mental Hygiene at the Capitol, Albany, August 14, covering refrigeration work for laboratory and mortuary in Kings Park State Hospital, Kings Park, N. Y.

### York Ice Machinery Corp. Gets State Hospital Contract

The York Ice Machinery Corp., 42nd St. and 2nd Ave., Brooklyn, N. Y., has been awarded the refrigeration contract for the new bakery, Marcy division, of the Unita State Hospital, at Marcy, N. Y.

## G. M. DWELLEY, INC. OFFERS BOOKLET ON SALESMANSHIP

An interesting booklet on salesmanship entitled "How to Sell" has just been prepared by G. M. Dwelley, Inc., Curtis Bldg,. Detroit, Mich., national distributor of Flexo-Tray, the rubber ice tray.

The booklet consists of 20 pages, and a copy will be mailed to distributors and dealers who are selling any form of mechanical refrigeration. It contains information regarding the sale of Flexo Tray, primarily as a means of developing prospects for refrigerator sales. The advice contained in the manual is based not on theory, but on the practical results obtained after trying out all the methods indicated.

### L. D. Becker Named President of Electrol, Inc., St. Louis

Leod D. Becker, owner and publisher of Fuel Oil Journal, having disposed of his publishing interests, has been elected president of Electrol, Inc., St. Louis, Mo. Other officers include, W. T. Koken, chairman of the board, M. E. Simpson, vice president in charge of sales, L. L. Jacobs, vice president and general manager. Executive and sales offices will be moved to New York City immediately.

# REFRIGERATION SALES IN NEW ZEALAND ARE HELPED BY CLIMATE

### Prosperity Reigns Over Country, Asserts Will Appleton

WILL APPLETON, managing director of Charles Haines Advertising Agency, Ltd., of Wellington, New Zealand, was a recent visitor to the Detroit offices of the Kelvinator Corp. During his sojourn at the "Home of Kelvinator" he was with R. A. Lundquist, manager of the export Division.

The Charles Haines organization has on its books about two hundred accounts, including those of many American manufacturers. Among these is the Kelvinator Corp., the advertising for which is prepared under Mr. Appleton's immediate direction. He keeps in close contact with J. J. Novin & Co., Kelvinator distributors at Wellington, and their various branches at Christchurch, Dunedin, Auckland, and other principal cities of the two big islands which constitute New Zealand.

"New Zealand is only eighty years old," said Mr. Appleton, "but her growth in the last ten years or so has been prodigious. My country was never so prosperous. As an indication of this, exports in 1927 exceeded imports by $45,000,000, while last year we sold over $60,000,000 more than we bought, so that our people have money to spend. Last year New Zealand bought 16,000 automobiles; the number will be over 20,000 in 1929. This rush to buy motor cars follows the rapid development of good roads.

"Our real development of electrical power commenced about 10 years ago. Today we have power lines serving completely over 68% of the area of the rural as well as urban country. That means we can have electric refrigeration, on the majority of the farms, throughout New Zealand, in the course of time.

"Already, we are large consumers of ice cream. The leading ice cream plant of Wellington has, within the year, trebled the capacity of its plant. Last summer the plant worked 24 hours a day. Naturally, there is a big demand for ice cream cabinets, which is bringing much business to Kelvinator dealers. The mean temperature of New Zealand is about 70 degrees, but in the north island it sometimes reaches 104. It is not surprising, then, that we are taking a great interest in electric refrigeration in our homes."


# A Handy Binder For Filing Electric Refrigeration News

ARE you, like many other readers of the News, keeping your copies for future reference? For your convenience we offer an excellent binder designed especially for Electric Refrigeration News. The illustration will give you an idea of this binder, showing the visibility of type at the binding edge. The insert shows how the metal strip is put through each issue to retain it, making it less likely that a copy may be removed without authorization.

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**ELECTRIC REFRIGERATION NEWS**

**550 Maccabees Building** **Detroit, Michigan**

# Penny "Icebergs" Make Sales for Copeland in New Orleans

## Neighborhood Grocer Pays for Machine by Selling Colored, Sweetened Cubes

AN idea conceived by a junior salesman of Copeland electric refrigerators in New Orleans to help him sell a second-hand freezing unit, plus a neighborhood grocer willing to take a chance on the idea, has started something new in frozen confections, the "Iceberg."

Icebergs are to children of New Orleans what Eskimo pie was to the nation's juveniles some years back, but may attain even greater

A Group of Contented Iceberg Customers.

popularity due to their penny cost. They consist of cubes of frozen, sweetened, flavored water. So popular have they become that more than 50 New Orleans grocery, candy and drug stores have gone into the business yet cannot meet the demand and children stand in line waiting for the next "batch" to be made up. Sales in some stores are reported running over 2,000 a day.

The junior salesman who will go down in history as the father of the Iceberg is connected with Edward N. Eberling & Co., New Orleans distributor of Copeland electric refrigeration products. The second-hand unit he had for disposal with a bonus offer attached to its sale, was one taken in by the Eberling company when it completely "Copelandized" New Orleans' largest department store. The grocer who bought the unit and paid nothing for the idea that since has been a money-maker, had a typical small grocery icebox which he wished to electrify. That was a year ago. Since then, the grocer declares he has paid his rent, his power bill and his notes on the installation of a Copeland "H" unit from the revenue from penny Iceberg sales. Others report Iceberg sales running from 1450 to over 2200 daily, with one boasting a 50 per cent increase in his grocrey business since he went into the Iceberg trade.

Since the first freak installation, Iceberg making units have been more scientificially selected. W. B. Wands, manager of the Eberling Co., reports the types found the most efficient are the Copland Models "Q," "R" and "W," using American Radiator domestic refrigerator sections, in sizes depending upon the prospect's refrigerator, and freezing from 144 to 288 cubes at a time. The Eberling Co., Mr. Wands reports, has been put to it to supply these types to New Orleans merchants seeking to enter the Iceberg trade.

"One can hardly appreciate the storm-like popularity Icebergs enjoy in New Orleans," says Mr. Wands. "Many stores report they make from three to four batches of these frozen suckers a day and even then the children, with pennies in their hands, stand in line waiting for the next batch.

"Making Icebergs is simple and inexpensive and selling them equally simple and astoundingly profitable. Two or three double spoonsful of desired flavor, such as strawberry, pineapple, orange, lemon, raspberry, grape, vanilla or chocolate and 2½ pounds of sugar are added to a gallon of water and frozen in our Copeland special low sides that fit into the storekeeper's refrigerator. The actual cost of making 9 dozen icebergs is 25 cents. These retail for $1.08. All a merchant, entering the frozen sucker field, needs do after installing his Iceberg equipment is hand out a few suckers to the children and he has started a rousing demand for them. Where the demand is enormous, special flavors of crushed fruits are being frozen into the Icebergs to feature a merchant's particular make.

"To show how great the Iceberg demand is, some of our merchants are forced to surprising limits to meet it and we have sold many Copeland ice cream cabinets intended solely for the storing of Icebergs."

## BIRMINGHAM, ALA., DEALERS REPORT GAINS IN SALES

Electric refrigerator outlets in the Birmingham, Ala., territory are reporting substantial increases in sales during the past thirty days. Clark & Jones Piano Co., handling Kelvinator, have installed commercial equipment in two new A. & P. Tea Co. stores. In the Ensley store they installed two Kelvinator AK compressors, five Larkin coils in Warren cases and a walk-in box, while in the Birmingham store two AK compressors and ten Larkin coils were installed.

The Alabama Power Co., Birmingham, has installed 54 General Electric water coolers in the new Good Year plant at Gadsden. Leeds Supply Co., Leeds, Ala., who have recently been appointed Kelvinator dealers, report fifteen household and two commercial sales in the past twenty days.

### Indiana Utility Sold 97 Units in First Three Weeks of Drive

The Interstate Public Service Co., Indianapolis, Ind., reported 97 electric refrigerators sold during the first three weeks of its sales campaign, with a goal of 250 in 60 days. Vincennes was leading the list with a total of 23 sales.

### "Reach-In" Type G. E. Refrigerator Installed in Duluth Dairy

A specially built General Electric refrigerator keeps milk healthful for the customers of the Lester River Dairy in Duluth, Minn.

This refrigerator holds 64 cases of 12 quarts each, or 768 quarts of milk at a time. It contains 135 cubic feet of storage space, is 11 feet by 7 long and 6 feet high, and operates with two DR-5 units.

The Lester River Dairy has six buildings and homes, and about 76 head of cattle. Four trucks are kept busy delivering 1100 bottles of milk, the daily output per day. A. S. Dunning, Inc., distributors of General Electric refrigerators in Duluth, are recommending the "reach in" type of cabinet in their territory and meeting with success in sales.

### Burch-Woodsend & Co. To Handle Kelvinator in Norfolk, Va.

Burch-Woodsend & Co., Inc., 614-616 Granby St., Norfolk, Va., have been appointed Kelvinator representatives in that territory.

### Service Concern Formed in Bridgeport, Conn.

The Hart Refrigerating Service, Inc., Bridgeport, Conn., has incorporated to conduct an electric refrigerating service plant. The officers are: Sherman E. Whiting, Charles W. Hart, and A. S. Gedauldig, al of Bridgeport.

### Appointed G. E. Dealer In Mt. Vernon, Ind.

Rosenbaum & Bros., Mt. Vernon, Ind., have been appointed General Electric refrigerator dealers in that territory.

MANUFACTURERS OF
ICE CREAM CABINETS
We will build Ice Cream Cabinets to your design ready for installation of compressors
REPLACEMENT PARTS FURNISHED
MOTORS METAL MFG. CO.
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Specially Adapted For
Pumping Water or Brine
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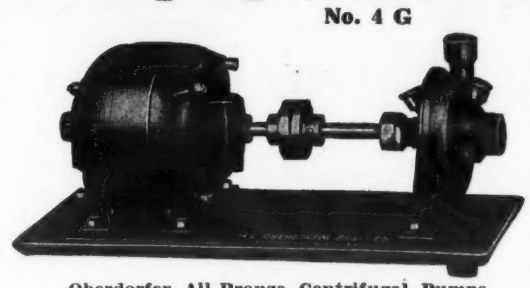

Oberdorfer All-Bronze Centrifugal Pumps

OBERDORFER Motor Driven outfits with all-bronze centrifugal pumps are specially adapted for refrigerating use or for water or milk cooling. They are compact, dependable, highly efficient and low in price. The pump is made of non-corrosive bronze and has ball bearing thrust. Supplied from stock with motors of any standard voltage.

Write today for complete information.
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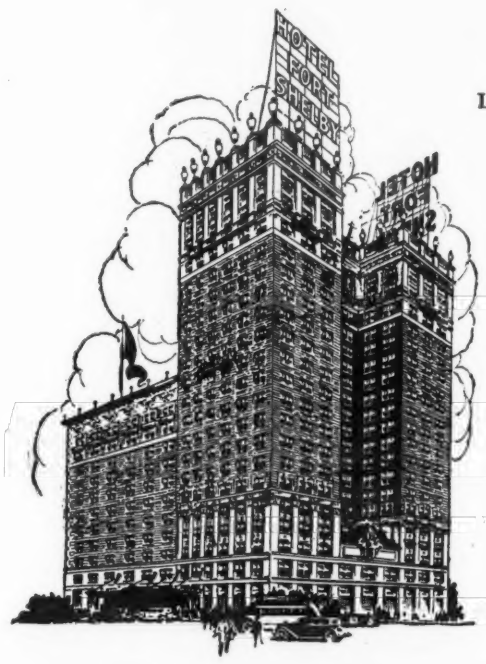
M. L. OBERDORFER BRASS CO.
2310 Thompson Road, Syracuse, N. Y.

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To those who visit
DETROIT

Experienced travelers look forward with pleasant anticipations to arrival in Detroit because of Hotel Fort Shelby's sincere hospitality, its complete facilities, and its high degree of comfort, convenience, and quietude. This 22-story hotel, with 900 reposeful, Servidor-equipped guest rooms and four excellent restaurants, is the favored stopping place of those whose standards of living are upon a high plane. All downtown Detroit is practically at the door.

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MAYNARD D. SMITH, *President* J. E. FRAWLEY, *Managing Director*

## JUDGE GRANTS WRIT IN BILL OF SALE FIGHT TO BOSTON KELVINATOR FIRM

The Kelvinator Sales Corp., Boston, Mass., was granted a writ of mandamus recently by Judge Carroll in the Supreme Court to compel William T. A. Fitzgerald, Register of Deeds of Suffolk County, to record a conditional sale of Kelvinators to be installed in a Roxbury apartment house, now in the course of construction. The Register of Deeds office had refused to accept the papers formerly presented on the grounds that Kelvinators were personal property and in no way constituted a part of the realty. Mr. Fitzgerald stated should his office be required to record conditional sales of personal property that might constitute a lien on real estate more help would be required.

In his finding Judge Carroll said: "The articles in question are not heating apparatus, plumbing goods or ranges. In my opinion they are of a like nature. The apparatus to be installed does not differ in nature and character from the apparatus specifically mentioned in the statute, although it serves a different purpose. As I consider the statute it has no application to the bricks, mortar, lumber, steel and cement that goes into the construction of a building, nor to such articles as doors and windows, which lose their identity when incorporated in a building. But it does apply to a cooling apparatus like the one in question, especially when the way and manner of its annexation is considered."

The case is considered as a test case and it is thought probable that Mr. Fitzgerald will take an appeal on Judge Carroll's finding to the full bench of the Supreme Court.

### Harper-Meggee Co. Offers Prize In Seattle Regatta

The Harper-Meggee Co., Copeland distributors at Seattle, have offered a Copeland electric refrigerator for the first prize in the "Free-For-All-Outboards" event in the forthcoming regatta to be held in Seattle. This regatta will include displacement races, and speed tests for power boats, outboard motors, sailboats, flatties, speed boats, and yachts of various classes.

### Frigidaire Dealers and Officials Convene at Spokane

Nearly 100 Frigidaire officials and dealers sojourned in Spokane, Wash., recently for a special four-day convention, held under the auspices of the P. F. Pickettee Co., Frigidaire distributors.

Speakers at this conference were H. C. Jamerson, assistant sales manager; H. D. Worley, northern regional manager; J. C. Duer, zone manager; R. L. Winegarner, educational supervisor; J. A. Ludington, factory service representative and C. L. DeVries of San Francisco, field representative of the General Motors Acceptance Corp.

## SUNBEAM ELECTRIC CO. PLANNING TO PRODUCE ELECTRIC REFRIGERATOR

The Sunbeam Electric Manufacturing Co., Morgan Ave., Evansville, Ind., manufacturer of locomotive headlights and electric lighting systems for farms, will enter the electric refrigerator manufacturing field on an extensive scale soon according to announcement by W. A. Carson, president.

Patent rights which cover the manufacture of the refrigerator have been taken over by the Sunbeam Co. from the Rotorite Co., which formerly engaged in electric refrigerator manufacture in California, according to Mr. Carson.

J. Howard Dennedy, former engineer with Servel, Inc., and more recently with the Rotorite organization, has arrived at the Sunbeam plant to take charge of the new electric refrigerator manufacturing department.

The unit which Sunbeam will manufacture is already on the market, Mr. Carson stated. About 1,000 Rotorite units are in use on the West coast and in Chicago and New England. An option for the manufacture of the refrigerator held by the Indian Motorcycle company was released recently when the company decided to enter the aviation field on large scale. Sulphur dioxide will be used as the refrigerant.

## PETRIE NOW IN CHARGE OF KELVINATOR SALES IN EASTERN TERRITORY

R. I. Petrie, one of the veterans of the Kelvinator organization, has been appointed district manager in charge of the territory comprising all of New York outside of the metropolitan area, and all of Pennsylvania outside of the metropolitan area of Philadelphia. He retains his connection with ReDisCo as new business manager for all of the United States and Canada.

Mr. Petrie has served Kelvinator in various capacities in different localities over a period of years. He was district manager in the Chicago territory covering several states, back in 1924. Three years ago he was made branch manager at Washington, D. C., where he received training in all phases of Kelvinator sales. Next he was assigned to Denver for a brief time to open the Kelvinator branch at that point.

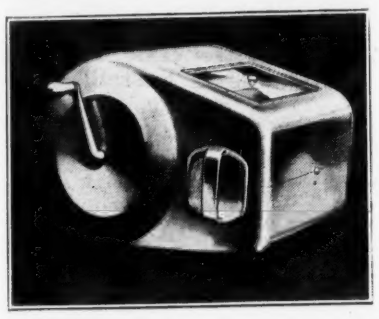
In April, 1928, he left the Kelvinator organization and was appointed new business manager for ReDisCo. In two years he has handled more than $32,000,000 in financing. March 15, 1929, Mr. Petrie again joined the Kelvinator sales department, and was assigned to Cleveland for special reorganization work.

### W. H. Kretz Joins Sales Force of Wagner Electric Corp.

Wagner Electric Corp., of St. Louis, announces the addition of W. H. Kretz to their transformer sales division. Mr. Kretz will travel the Southwest.

He was formerly with the Public Service Co. of Oklahoma, and recently was Texas district representative for the Jeffry De Witt Insulator Co.

## MAKES ICE CREAM IN 30 SECONDS



Handled exclusively by General Electric dealers and distributors, the Gardner half-minute freezer (pictured above) is now being marketed in quanties. It consists of a roller freezer, packed with ice and salt, which revolves within a freezing casing. As it revolves, the roller freezes the mixture in the casing. The frozen liquid is automatically scraped off the roller, which continues to do its work until all the liquid in the casing is frozen.

### Completes Installation of Copeland Units In U. S. Submarines

Installation of a Copeland unit in the last of the 35 U. S. submarines to be so equipped is announced by the Teves-Joaquin Co., Honolulu, Hawaiian representatives of Copeland Products, Inc. The work was done at the U. S. naval base at Pearl Harbor.

"Placing iceless units in a submarine is a mean, hard and slow job," writes an official of the Teves-Joaquin Co. "The space for the unit is miserably small: working quarters are cramped and hot and when one remembers the terrific vibration a submarine undergoes on duty the necessity for correct installation is all-important."

The contract to install Copeland units in the submarines was let some months ago. The boats so equipped are of the V, R and O types. The unit in each case is located snugly in a tiny galley under the companionway leading to the turret. The condensing unit is of the 2-cylinder, air-coled type, operated directly from the ship's dynamo, using a 110-volt direct current.

### Announces Promotion in G. E. Publicity Office at Schenectady

Clyde D. Wagoner of the General Electric Co., publicity office, Schenectady, N. Y., has been promoted to the directorship of the newspaper and magazine sections of the office, succeeding the late James A. Horne, according to an announcement by Martin P. Rice, director of publicity and broadcasting for General Electric.

### Two Kelvinator Dealers Appointed In Alabama Territory

The Wesley Hardware Co., Talladega, Ala., has been appointed Kelvinator dealers for the north half of Talladega county and all of Clay county. The Wallis Hardware Co., Sylacauga, Ala., has also signed to handle Kelvinator under the Birmingham distributor.

## ST. LOUIS DEPARTMENT OF HEALTH INVESTIGATES REFRIGERATION SYSTEMS

Answering a call from Health Commissioner Starkloff, various representatives of the industry journeyed to St. Louis Thursday, July 25, to explain various aspects of mechanical refrigeration to the St. Louis Health Department at a special meeting.

Health Commissioner Starkloff started an investigation into the nature of mechanical refrigeration Wednesday, July 17, when he wired Commissioner Arnold H. Kegel for full information in regard to the latter's findings on the subject.

The St. Louis Department of Safety plans to cooperate with Commissioner Starkloff in drafting an ordinance regulating the installation and inspection of all refrigerating devices in the near future.

### King Hardware Co. Named Kelvinator Dealers in Atlanta

According to an announcement made by L. W. Morris, manager of the Kelvinator factory branch in Atlanta, Ga., the King Hardware Co. has been appointed authorized dealers for the Kelvinator line of electric refrigerators in Atlanta and suburban territory. The King firm operates one large store in the downtown section of Atlanta and a chain of twelve branch stores in other parts of the city and its suburbs.

### G. E. Appoints Dealer in Galva, Ill.

Sunquist & Welin have been appointed dealers for General Electric refrigerators in Galva, Ill.


## Reduced Rate For Group Subscriptions

**Ten or more subscriptions entered at one time, $1.50 each**

**Twenty or more subscriptions entered at one time, $1.25 each**

**In response to many requests a reduced rate is now offered for subscriptions orders in groups of ten and twenty entered at one time. This plan applies to subscriptions paid for by the individual subscriber, papers to be mailed separately to individual addresses. Remittances may be enclosed with order or one individual may be designated to take responsibility for payment on receipt of invoice. Manufacturers, distributors, and dealers desiring to enter subscriptions for ten or twenty members of their organizations are also invited to take advantage of this reduced rate.**

**Electric Refrigeration News,**
**550 Maccabees Bldg.,**
**Detroit, Michigan.**



# Refrigeration Patents

## Complete Record of Court Proceedings in Frigidaire-Absopure Patent Suit Offered in Special Supplement

***One Dollar Per Copy***

**THE complete proceedings of the Federal Court in the famous patent suit of Frigidaire Corporation versus General Necessities Corporation tried at Bay City, Michigan, March 18 to 23, 1929, as published in the March 27 and April 10 issue of Electric Refrigeration News, have been reprinted in the form of a forty-eight page supplement.**

**Note: The official decision of Judge Arthur J. Tuttle (not previously published in the News) is included in the record.**

**A most interesting historical document and a clear explanation of the scientific laws on which mechanical refrigeration is based.**

**Only a limited number of copies of this special supplement are available. Orders should be entered immediately. Price one dollar per copy postpaid. Remittance must accompany order.**

**COMMENTS OF READERS**

I am interested in the patent situation which, in my opinion, you are covering better than any trade publication I know.—W. A. Steiger, Westinghouse Electric & Mfg. Co., Philadelphia, Pa.

You are to be congratulated for publishing such an attractive paper as Electric Refrigeration News. I was particularly interested in reading through the details of the Frigidaire vs. General Necessities case. You certainly covered this admirably, and inasmuch as several of the witnesses were men whom I have known for a great many years, I found the story most fascinating.—Louis Ruthenburg, president and general manager, Copeland Products, Inc., Detroit, Mich.

I also must congratulate you on the completeness of your report on the patent suit between Absopure and Frigidaire at Bay City.—Wm. Robt. Wilson, Allied Motor Industries, Inc., Detroit, Mich.

We believe that every distributor, dealer and retail salesman will find the patent trial between Frigidaire and Absopure particularly illuminating and educating. A very thorough history of refrigeration with perhaps a few selling points is included as part of the testimony.

The trial was held at Bay City, Michigan, by Federal Judge Tuttle. Details the judge found difficult to understand are, no doubt, the same which are puzzling many others. We believe that a careful reading of the questions and answers will be well worth the effort.—Refrigeration Dept., General Electric Co., Cleveland, O.

Please accept my hearty congratulations on your issue of the 27th ult. Your paper has indeed again shown its great value to the industry by your publishing the proceedings of the suit of the "Frigidaire Corporation, plaintiff, vs. General Necessities Corporation," given before Judge A. J. Tuttle.—Fremont Wilson, consulting engineer, New York, N. Y.

We compliment the Electric Refrigeration News for obtaining and publishing these proceedings. Aside from helping the average man to obtain a clearer idea of what refrigeration processes are like, one cannot help but be impressed with the thought of the years, the time and the effort pioneers devoted to solving this problem of creating cold by artificial means.—Copeland Ice Cube, Jr.

I have heard many favorable comments on your action in publishing full information respecting this suit. It will clear away a great deal of the misapprehension that exists in respect to the patent situation.—H. R. Van Deventer, New York, N. Y.

**Electric Refrigeration News,**
**550 Maccabees Building, Detroit, Michigan**


## Kelvinator District Managers Attend Detroit Sales Conference

A conference of the district managers of the Kelvinator Corp. was held at the factory in Detroit on July 19th. The representatives were given information concerning production and sales plans for the current selling year.

Standing, left to right, Earl Lines, advertising director; J. B. Johnson, commercial sales department; K. G. Ritter, Detroit; H. L. Percy, Arizona and New Mexico; H. A. D'Arcy, utilities; T. P. Hallock, Florida, Georgia and Alabama; J. S. Sayre, assistant director of sales; J. M. Fernald, manager commercial sales department; T. H. Maginnis, Chicago territory; F. J. Foersterling, Indiana and Illinois; J. S. Cortines, Texas and Oklahoma; R. I. Petrie, New York and Pennsylvania, with the exception of the metropolitan areas of New York City and Philadelphia; Danner Bierhaus, commercial sales department; S. D. Camper, Kentucky and Tennessee.

Seated, left to right: H. K. Lyons, order department; H. A. Dahl, North and South Dakota, Wisconsin and Minnesota; C. E. Loman, Virginia; C. D. Mitchell, J. K. McCarthy, North and South Carolina; Harold Priest, sales department; W. B. Milliken, Colorado, Wyoming and Montana; G. Strelinger, sales department; J. C. Burton, Pennsylvania, Maryland and District of Columbia; E. A. Seibert, service manager; Vance E. Woodcox, demestic sales department; L. L. Langley, Northeastern states; J. E. Oliphant, Ohio and West Virginia; L. H. Huntoon, sales department; Wm. E. Day, Missouri and Arkansas; P. Johnson, Massachusetts, Rhode Island and Connecticut and F. H. Sperry, Nebraska, Kansas and Iowa.

**LASSEN**
TEMPERATURE—PRESSURE
**CONTROLS**
Positive Range and Differential Adjustment
Non-Deteriorating Mercury Tube Switch—Meets all Requirements
GOODNOW & BLAKE MFG. CO.
3840 BEAVER STREET, DETROIT, MICH.

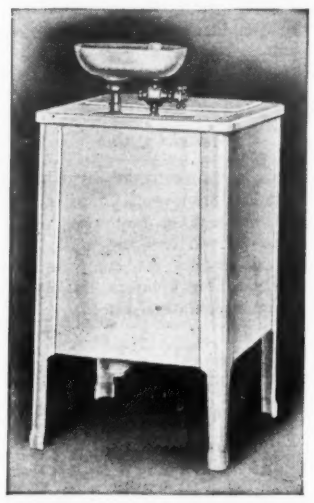
**BRUNSWICK-KROESCHELL REFRIGERATION**
NOTABLE INSTALLATIONS

For the WORLD'S LARGEST HOSPITAL GROUP

The selection of Brunswick-Kroeschell Refrigeration for the Columbia Presbyterian Medical Center of New York is another indication of the completeness of the Brunswick-Kroeschell line.

Brunswick-Kroeschell Company manufactures equipment of capacities ranging from 500 lbs. refrigerating effect and up, using ammonia, carbon dioxide and methyl chloride as refrigerants. And back of it all is more than 32 years of continuous and successful application.

BRUNSWICK-KROESCHELL COMPANY
*Refrigerating & Ice Making Machinery*
NEW BRUNSWICK, N.J. - CHICAGO, ILL.

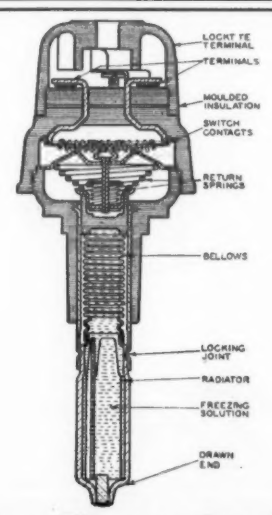


Capacity 6 to 10 Gal water per hr. cooled from 80° to 50° F.

**DEPENDABLE! DURABLE!**
*The "EBCO"*
COOLER FOUNTAIN
with automatic stream control

No squirting and splashing—drinking stream regulated to constant height regardless of variations in line pressure. Cabinet interior of sheet copper. Furnished with either 1/3 or ¼ H. P. Compressor, self contained or remote installation.

WRITE FOR CATALOG
The D. A. Ebinger Sanitary Mfg. Co.
401-411 W. Town St. Columbus, Ohio
Manufacturers also of Ventilated Closets, Urinals, Wash Fountains, Steel Toilet Enclosures.




**Ranco Thermostat Controls**

for Household Refrigerators, Ice Cream Cabinets, Water Coolers, etc., maintain an even temperature. Once installed, no further adjustments necessary. Now standard equipment with many manufacturers. *Write for Bulletin 603.*

THE AUTOMATIC RECLOSING CIRCUIT BREAKER COMPANY
COLUMBUS, OHIO, U. S. A.

# MANUFACTURERS' NEWS

## COPELAND UNITS WILL BE USED WITH SPEAR ICE WATER COOLERS

COMPLETION of arrangements whereby Spear ice water generators are to be marketed exclusively in connection with Copeland condensing units is announced by officials of Copeland Products, Inc.

Spear ice water generators are manufactured by the James Spear Stove & Heating Co., Philadelphia. Until recently they were sold with and operated by a variety of compressor units. Now, under the contract just signed, Copeland's condensing units will be used exclusively. The arrangements also provide for continuance of each company's present selling organizations, but enable Copeland distributors and dealers to add the Spear generators to their present refrigeration line.

The Spear mechanism consists only of the generating-cooling tank, Copeland condensing unit and the requisite amount of pipe and fountains, faucets or other outlets. Two types are employed, the non-circulating, for small installations, and the circulating, using a pump, in factories or large buildings with extended ice water lines. Both operate alike. Water from the city mains enters the top of the tank under pressure, is cooled as it passes down the surface of the ice block built on the coils by the Copeland compressor and drops to the bottom where it is drawn off into the system. The water is taken from the bottom of the cooler to prevent any accumulation of sediment there.

The Spear system also reverses the usual practice in distributing ice water by employing the one-way pipe system. A steel pipe runs from the tank to all outlets. Inside this pipe is another of copper in no way connected with the outside pipe or the outlets. The inner pipe carries the water directly off the tank's ice coils to the end of the line, where it comes out of the copper pipe's open end and drops back in the space between the inner and outer pipes. It is taken from the outer pipe to connections with the various faucets and fountains. With the water going directly from the ice coils to the end of the installation the most remote outlet gets water first and as cold as does the nearest outlet in any other system. Because the descending water surrounds the inner pipe through which a chilled stream is steadily ascending its temperature is evenly maintained until the last outlet, in this case the one nearest the tank, is served. Thus all fountains or faucets receive water of unvarying temperature. By this means faucets 1,000 feet distant are as efficiently served as are the outlets, nearer the tank, no matter how numerous or how frequent their use. This type of piping is said to cut installation costs as much as 40 per cent and to reduce generating costs appreciably.

Spear generators have a tank capacity of 8 to 100 gallons but the heavy block of ice formed about the coils during normal usage and then easily maintained, acts as a reserve sufficient to meet peak loads and eliminates need of constant use of the compressor and generating units.

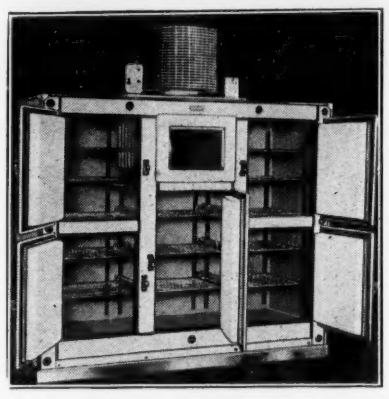
Recent promient installations of Spear-Copeland generations are those in the 325-room Stratford Arms apartment hotel in New York; in the banking offices of the Integrity Trust Co., Philadelphia, and on the Louisville inter-state bridge where ice water will be supplied for the administration building and the five toll houses, by a single unit.

## SEVEN COMMERCIAL REFRIGERATORS ARE ANNOUNCED BY G. E.

A line of seven commercial refrigerators in "package" form is announced by the electric refrigeration department of the General Electric Co.

These new refrigerators are completely assembled and ready for installation and operation, and contain the same type of hermetically sealed unit as the domestic models. A feature of these new models is the self-defrosting cycle. At regular intervals, the unit defrosts itself automatically without shutting off refrigeration and with no attention on the part of the user.

The air circulating through the cabinet comes in contact with the cold evaporator surfaces. A certain amount of moisture in the air condenses on these surfaces, depending on the temperature. The lower the temperature, the greater the quantity of condensed moisture. The evaporator of the new commercial refrigerating unit has been designed with sufficient surface so that its operating temperature is high enough to keep the removal of moisture from the air at a minimum consistent with good refrigeration.



**Interior View of the New G. E. Model C 450.**

The temperature is automatically maintained and can be varied by adjusting the visible temperature control on top of the cabinet.

The DR-5 unit which is used on all the commercial models with the exception of C-270, is a ½ h.p. 220 volt condenser motor. Model C-270 has a DR-4 unit which is 1/3 h.p. single phase condenser motor.

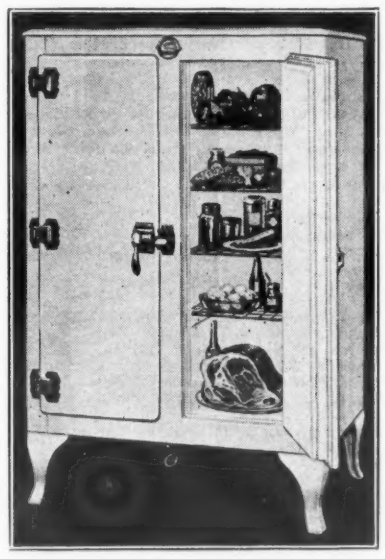
The cabinets are porcelain interior and white lacquer exterior. They are trimmed in metal with high mirror permanent polish. The latch is of an automatic trip-lock type and both the latch and hinges have been given a series of rigid tests. Shelves are straight wire and adjustable. Hooks are conveniently placed in certain models for hanging sides of meat.

The models, Nos. C-270; C-450-451-452; C-600-601-602, are designed to "reach in" instead of "walk in." This principle of design facilitates easy reaching into the compartments.

## LEONARD ANNOUNCES INNOVATIONS IN 1930 ALL-STEEL MODELS

SEVERAL refrigerator innovations in the new 1930 Leonard all-steel refrigerator line were announced at the July Furniture Markets, both in Chicago and Grand Rapids.

Leonard announced the "Food Safety Signal," the new automatic self-opening door and a daylight base. The Food Safety Signal is a refrigerator temperature indicator permanently attached to the upper front of the cabinet, enabling



**Leonard Foodmaster Model With Temperature Indicator**

the housewife to tell at a glance just what are the temperature conditions inside the food chambers. There is a pointing needle which signals safety so long as the inside temperature is well below 50 degrees. If, through lack of ice replenishment there is a temperature rise, the needle in plain sight so indicates in ample time for re-icing.

The new automatic self-opening refrigerator door, is an added convenience and a time-saver. Just a slight pressure of the foot on a small lever at the cabinet's base, and the door swings open. It enables the use of both hands in carrying dishes to the refrigerator. It saves dishes from breakage and from rehandling.

The daylight base permits easy cleaning beneath the refrigerator and prevents accumulation of dirt. The 1930 All-Steel Leonard line introduces the new frost-steel models, with crackle surface in cream and green finishes; the steel de luxe, with smooth white duco finish; and the all-porcelain-on steel models, designated as masterpieces of Leonard quality.

The new Leonard all-steel line includes models for homes, apartments, groceries, markets, hotels and hospitals. There is a large variety of sizes, and all are adaptable to electric, ice and gas refrigeration.

## ELECTROLUX SALES RUN HIGH DURING FIRST HALF OF 1929

Electrolux sales for the first six months of 1929 were two and a half times greater than they were during the same period last year, according to H. W. Foulds, vice president in charge of sales, Servel Sales, Inc.

June was the best month that Electrolux has experienced, says Mr. Foulds. July performances have been running considerably ahead of expectancy, and the sales during the first ten days of this month were double those of the same period in 1928.

## INSULITE SEEKS REFRIGERATOR CAR CONTRACT IN ENGLAND

A. S. Bull, representative of the Insulite Co., formerly connected with their Chicago office and now doing special work for Insulite in England, reports that his concern at the present time is figuring on the insulation requirements for a considerable number of refrigerator cars which will be built there for railroads in foreign countries.

"One set of cars," he writes, "is specially interesting because they have been planned for complete mechanical refrigeration. The cars will have four inches of insulation all around, and the power required will be taken directly from the axle. These cars are for service in Argentine, and are apparently the first of this type to be used there."

### Marshall Field & Co. to Handle Ice-O-Matic Line in Chicago

Marshall Field & Co., of Chicago, have taken the franchise for the sale of Williams Ice-O-Matic electric refrigerators in their retail store, according to announcement by C. U. Williams, president of the Williams Oil-O-Matic Heating Corp., of Bloomington, Ill.

### H. Roy Denman Joins Holmes Force

H. Roy Denman, formerly with Judson C. Burns, General Electric distributor in Philadelphia, is now a retail salesman for Holmes Products, Inc.

**RUBBER ACCESSORIES**
FOR THE
**REFRIGERATION INDUSTRY:**
V-TYPE COMPRESSOR BELTS, "GLOBELT" Brand—Original makers V-Type Belt—"RED STRAND" brand—our latest development. Also Anti-Noise Motor Rubber Bushings or Cushions.
Globe Rubber & Tire Co., Inc.
Prospect and Globe Streets
TRENTON, N. J., U. S. A.

**To Manufacturers of Electric and Gas Units**
Your specifications for CABINETS will be accurately carried out when given to
PUFFER-HUBBARD MFG. CO.
MINNEAPOLIS, MINN.

FLINTLOCK CONDENSERS
*Efficient — Economical Compact*
Greater Efficiency at Less Cost
WRITE FOR OUR BOOKLET
FLINTLOCK CORPORATION
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*precision built*

**Motor, Transmission, Eccentric and Crank Shafts**
We specialize in small SHAFTS made to your specifications. Workmanship absolutely guaranteed.
Send us your blue prints and we will send you our prices.
Modern Machine Works, Inc.
192-198 Milwaukee St. MILWAUKEE, WIS.

*Get the most out of your* ELECTRIC, GAS *or* ICE *Refrigerator*

Send $1.00 for the two big 50c rolls (West of Missouri and South Coast States 60c per roll, both for $1.20 postpaid).
FREE: When ordering mention this ad for a Miracle Paper Dish Rag and interesting samples for You and Your Friends.

YOUR refrigerator will serve exactly and according to intelligent use and operation, and your palatable, health building foods will speak for themselves when served.

Are you using both KVP Refrigerator Papers? Try the famous pair—Heavy Waxed Paper in "Cutter Box"—it seals tight (one sheet will do) keeps the moisture in or keeps the moisture out as desired. However, remember all foods should not be wrapped in Waxed Paper—for 100% results you also need KVP Household Parchment, the waterproof paper for cooking and for wrapping all moist, greasy and wet foods—a cheesecloth substitute (you can boil it) like a rag when wet—use it again and again—it wears.

*Try your Grocer, Stationer, Hardware, Department Store and Naborhood Merchant first; if they cannot serve you KVP will pay the parcel post.*

KVP STANDS FOR "THE WORLD'S MODEL PAPER MILL"
KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO MICHIGAN U.S.A.
MANUFACTURING WORLD-WIDE FAMOUS FOOD PROTECTION PAPERS

**IF you are in any way interested in Electric or Gas Refrigeration** ... read the above over twice because it will mean much to you. .. this is our National message to the American Housewife in cooperation with your refrigerator sales campaigns. Write for samples and advertising ideas that sell your refrigerators to new customers and keep old customers interested.

TRADE
EXTRA DRY ESOTOO
MARK
THE PUREST
SULPHUR DIOXIDE
Analysis Guaranteed
WE HAVE AN AGENT, WITH OUR PRODUCT IN STOCK, NEAR YOU — WIRE US WHERE WE CAN SERVE YOU
VIRGINIA SMELTING CO. West Norfolk Va.
F. A. EUSTIS, Sec. - 131 State St. BOSTON 2 Rector St. NEW YORK
VIRGINIA SMELTING CO. WEST NORFOLK, VA.